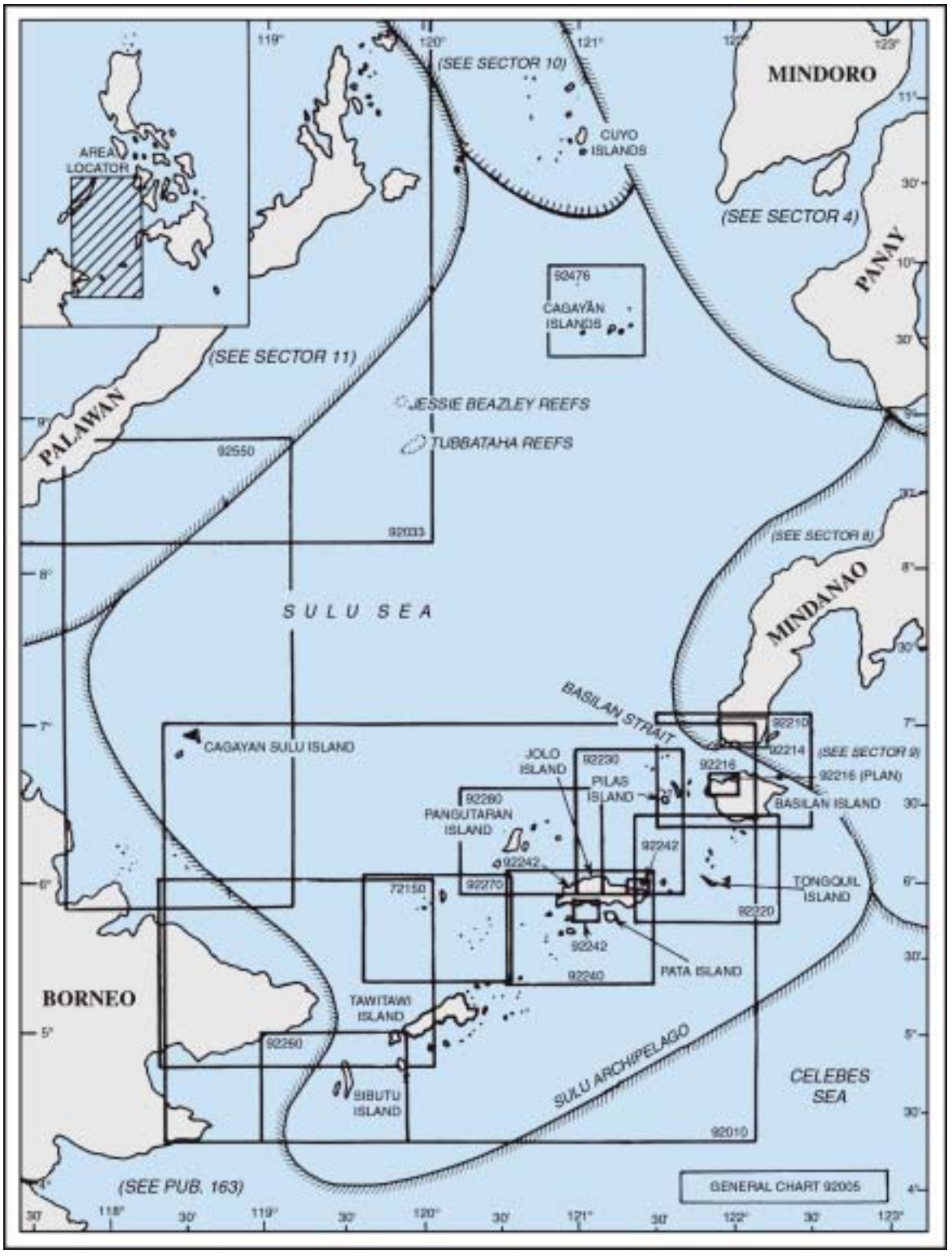
Select "See Sector" to be Hotlinked to that Sector



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR **12** —CHAR T INFORMATION

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SECTOR 12

THE SULU SEA AND THE SULU ARCHIPELAGO

Plan.—This sector describes the islands and dangers in the Sulu Sea with the descriptive sequence from W to E, and then contunues with a description of the island groups, dangers, and passages of the Sulu Archipelago.

The sequence of description is from N to S.

General Remarks

12.1 Winds—Weather.—In the Sulu Sea, E winds and fine weather prevail in October, and the Northeast Monsoon is not established before November. The latter gradually increases in strength and lasts until about the end of April.

In January and February, the Northeast Monsoon is fully developed, but does not have the force of the winds in the South China Sea. Its force normally does not exceed that of a fresh breeze and is strongest in the areas W of Panay Gulf and the Mindanao Sea.

During the period of the Northeast Monsoon, the winds are not steady and are often variable. Near Mindanao, the N winds never become fresh, and light variable winds frequently displace them for several days. This often occurs near the end of January.

May is the month of transition and during its later part the Southwest Monsoon commences. It is fully established by the end of June and lasts until October. Variable winds prevail during May and June and are accompanied by fine and clear weather.

In July and August the Southwest Monsoon is accompanied by heavy rain squalls and stormy weather.

In September, heavy mists are found off the coast of Mindanao. Considerable rain falls in the vicinity of Palawan, the Calamain Group, and Panay during the Southwest Monsoon.

Typhoons pass occasionally over the N part of the Sulu Sea, but they usually cover only a small area. During July and August squalls and SW winds of the outer zones of the typhoons affect this area. Periods of fine and clear weather occur frequently.

After such periods, the winds sometimes shift to N and NW, accompanied by a gradual drop of the barometer and followed by squally and stormy weather. It should be noted that NW winds are frequent in Mindoro Strait and that they are not usually followed by periods of squally weather.

Tides—Currents.—Little is known of the currents in the Sulu Sea because of the small number of observations.

The currents are reported to depend to a great extent on the strength and force of the wind and are variable, especially during the Southwest Monsoon. The rate seldom exceeds 1 knot.

During the months of December to February, SW currents, produced by the Northeast Monsoon, are rather constant.

At this time water flows directly from the North Equatorial Current into the Sulu Sea, through San Bernardino Strait and Surigao Strait, and from the Sulu Sea into the Celebes Sea. It also passes from the Sulu Sea to the South China Sea via Balabac Strait.

Two tidal currents enter the Sulu Sea and passages between the Philippine Islands from opposite directions, one from the South China Sea through the W openings, and the other from the Pacific through the E openings.

These tidal currents meet in the many channels between the S islands. The tidal current from the South China Sea passes from N to S along the W coast of Luzon and Palawan and through Verde Island Passage, Mindoro Strait, Linipican Strait, and Balabac Strait.

Between the Calamian Group and the N end of Palawan, the tidal currents set in a SE and opposite direction.

The E tidal current from the South China Sea SE passes through Balabac Strait and turns NNE well off the E coast of Palawan and spreads itself like a fan over the Sulu Sea in a NE and E direction. It forms the E current between Cuyo Islands and Panay, and also that which sets S of the Cagayan Islands, where it is reported to meet the tidal current from Surigao Strait approximately on the meridian of Cagayan Island.

The **Sulu Sea** (9° 00'N., 120° 00'E.) lies between Palawan on the NW; Mindoro, Panay, and Negros on the NE; Borneo on the SW; and the Sulu Archipelago and Mindanao on the SE. The Sulu Sea is deep throughout, especially its E part.

The three groups of islands in the sea include the Cuyo Islands; the Cagayan Islands, lying in the central part of the sea; and the Cagayan Sulu Islands, lying in the SW part.

Navigable straits and passages connect the Sulu Sea with the the South China Sea, the Celebes Sea, and the Pacific Ocean.

The Sulu Sea—Southwest Part

12.2 Bancoran Island (7° 58'N., 118° 40'E.), lying about 96 miles E of Balabac Peak, is a densely wooded islet, 30m high to the tops of the trees. Reefs extend from the E and W sides of the island.

A shoal, with a depth of 12.8m, lies 1.5 miles NNW of the island. The reef between the island and this shoal was recently reported to extend farther N. The island was reported to give a good radar return at 17 miles distant.

San Miguel Islands (7° 45'N., 118° 30'E.), consisting of four islets and several off-lying dangers, lie 16.5 miles SW of Bancoran Island. There is no safe anchorage around these islands.

Bancauan Islet (7° 46'N., 117° 32'E.), the largest of the San Miguel Group, is 24m high. It is eroded and nearly divided by the sea about 0.2 mile from its NE point.

A small coral islet lying 0.75 mile N is connected to the island by a reef with sand cays and large boulders.

Manuc Manucan Islet, 0.9m high, is reported as barren and covered with white sand; it lies 5.25 miles WSW of Bancauan Islet. Manuc Manucan is connected by a reef to a small islet lying 0.5 mile S.

A reef, above and below-water, extends 1.5 miles NNW from the small islet. Shoal ground connects Manuc Manucan Islet with a 4m coral patch 2.25 miles NW. A 4.3m patch lies 1.5 miles NNE of the islet.

Moyune Shoal (8°03'N., 118°07'E.), 29.5 miles NW of Bancauan Islet, has a least charted depth of 5.8m. Shoals, position approximate and doubtful, lie 5 miles SW; 10 miles N; 1 mile NNE; 8 miles E, and 6.5 miles E of Moyune Shoal. Whirlpools form in an area 10 miles SE of the shoal.

Maeander Reef (8°06'N., 119°18'E.), lying 60 miles E of Moyune Shoal, is a sand cay about 2.4m high, encircled by a steep-to reef. A radar conspicuous wreck has been reported on the NW side of the reef.

Valparaiso Shoal (7°51'N., 118°27'E.) is located 7.5 miles NW of Bancauan Islet; it is reported to be 2 miles in extent, with a charted depth of 5.5m. The coral bottom near the shoal is clearly visible at a depth of 11m. A coral reef extending approximately 4 miles E to W was reported to lie 2 miles S of Valparaiso Shoal.

12.3 **Java Reef** (7°50'N., 118°34'E.), 7 miles ESE of Valparaiso Shoal, is a small dangerous reef with a depth of 4.5m. Discolored water and tide rips mark the extent of the reef and shoal ground. It is reported to dry.

West Bank (7°43'N., 118°23'E.), with least depth of 10.9m near its center, lies 4.5 miles W of Manuc Manucan Islet. The bank extends 3 miles NNW and the same distance SSE from the 10.9m depth.

Southwest Bank (7°40'N., 118°20'E.), lying about 6 miles SW of Manuc Manucan, extends ESE to WNW for about 8 miles. A least depth of 16.5m exists at the SE end of the bank. The coral and sand bottom of the bank is visible at depths of 24 to 31m. Anchorage, good holding ground, can be taken on the bank.

A shoal with a charted depth of 7.3m reported (2000) 2 miles S of Southwest Bank.

Don Juan de Austria Shoals (7°38'N., 118°11'E.), with a charted depth of 3.7m, were reported to lie from 16 to 21 miles WSW of Manuc Manucan Island. A 12.8m patch lies about 18 miles SW of the same island.

A shoal covered with large boulders, some of which were nearly awash, was reported to lie about 11.5 miles SSW of Manuc Manucan Island. A sounding of 7.3m was obtained on this shoal, and a sounding of 12.8m was found near its edge which appeared to be steep-to.

A vessel reported (1996) grounded on a soft coral reef, in vicinity of (7°40.6'N., 118°11.6'E.). Vessels are adviseed to give Don Juan de Austria Shoal a wide berth.

12.4 **Memnon Shoal** (7°27'N., 118°25'E.), lying about 16.5 miles S of Manuc Manucan Island, has a reported depth of 10.9m coral and sand, but could be shallower.

Tides—Currents.—Currents over Memnon Shoal have been reported to set SSW and NNW at a maximum rate of 1.25 knots. Heavy tide rips are reported to mark the NE edge of the shoal. Breaking tide rips, extending 7 miles NE to SW, were encountered about 25 miles SSE of Manuc Manucan Islet.

No bottom was found at a depth of 183m at the S end of the rip.

Small banks of 18.3 and 20.1m were reported to lie 22 and 20 miles SSW and S, respectively, of Manuc anucan Islet.

From Memnon Shoal to Cagayan Sulu Island, a line of reported shoals exists, best seen on the chart.

Cagayan Sulu Islands, a group of islands, islets, reefs, and shoals lie in the SW part of the Sulu Sea, between 32 and 51 miles S of Manuc Manucan Island. The islands are inhabited except for Bintut, Mandah, and the smaller islets. Tidal currents are negligible.

Cagayan Sulu Island (7°00'N., 118°29'E.), the largest island of the group, is mountainous and lies with its NW extremity, **Tavotavo Point** (7°01'N., 118°24'E.), 26 miles S of Memnon Shoal; **Banga Point** (7°03'N., 118°31'E.) is the NE extremity. Mount Ledan, the summit of the island, standing in the NE part, slopes gradually to the sea.

The mountain is reported to be a good radar target at 26 miles distant. The S coast of the island contains fresh water crater lakes. A prominent hill rises 1 mile S of Mount Ledan. There is a radio station and airstrip on the island.

12.5 Except for its NW and SE extremities, Cagayan Sulu Island is fringed by a partly drying coral reef extending 0.75 mile offshore in places.

Tandotao Point (6°58'N., 118°32'E.), the SE extremity of the island, is a finger-like extension of the coast which has a 100m high hill near its extremity. A white concrete tower, from which a light is shown, stands on high ground close W of the point.

Gunboat Harbor, 1.5 miles W of Point Tandotao, is small and shallow.

Cagayan de Sulu, located on the N side of Gunboat Harbor, is a sub-port of entry administered by the Bureau of Customs for enforcing customs laws.

The port facility consists of a rock causeway about 238m in length, with a steel pile wharf, 30m in length at its seaward end. There were reported depths of 3.7m at its head, and lesser depths on both sides. A radio tower stands about 0.5 mile NW of the wharf.

Anchorage can be taken, sheltered during the Northeast Monsoon, in a depth of 18.5m, about 0.5 mile offshore of Lake Singuan, the farthest W lake of the fresh water crater lakes along the S shore.

The best anchorage during the Northeast Monsoon is at Southwest Anchorage, off the W side of the island, in depths of 16 to 20m, with Tavotavo Point bearing 350°, distant 1.25 miles. During the monsoon, a heavy swell sets around the point and the sea breaks along the reef.

12.6 **Jurata Bay** (6°59'N., 118°28'E.), its entrance nearly blocked by a reef, lies 3.5 miles W of Tandotao Point. A rock, below water, lies 1 mile SW of the entrance to the bay. Jurata village is located on the E side of the bay.

Lapunlapun Island, an islet, lies on the N edge of a detached reef, about 3.25 miles ENE of Tavotavo Point.

Silimusian Island, a smaller islet, lies 0.3 mile NW of Lapunlapun.

Anchorage can be taken, in depths of 33m, with Lapunlapun Island bearing 058° and Kamutyajan Point, located 0.75 mile SW of the island, bearing 193°.

Bulingis Point, located 0.6 mile S of Lapunlapun Island, aligned with a prominent hill 244m high, which stands 1 mile SE of Mount Ledan, leads to the anchorage.

Keenapusan Island (7° 11'N., 118° 25'E.), the farthest N of the Cagayan Sulu Islands, lies 8.25 miles NNW of Cagayan Sulu; it is fringed by a reef which extends 0.3 mile off its S side. The 40m curve lies 0.5 mile off the N and E sides, but up to 2 miles off the other sides of the island.

Anchorage can be taken off the SW side of the island with its summit bearing 041° and the summit of Pamelikan Island bearing 153°, in a depth of 12.8 to 18.3m, sand and coral.

There are a number of islands lying on a line SSE from Keenapusan Island to Cagayan Sulu. From N to S they are Pamelikan Island, Bintut Island, Bohan Island, and Mandah Island. Mandah is reported to be the highest of these islands. The position of the islands may best be seen on the chart.

Northwest Bank (7° 13'N., 118° 22'E.), with a least depth of 7.3m, lies with its SE extremity 3.25 miles NW of Keenapusan Island. The bank is steep-to and vessels should not anchor on it.

A small unexamined bank, with a depth of 25m, was reported 7 miles N of Keenapusan Island. A depth of 5.8m was reported 3.5 miles farther NW.

Northeast Bank (7° 12'N., 118° 28'E.), with a depth of 7.3m, lies 3 miles NE of Keenapusan Island. Fair anchorage can be taken on the E or SW sides of the bank.

An area reported to contain many shoals is charted S of Northeast Bank. Many shoals exist W of the islands N of Cagayan Sulu Island, and may best be seen on the chart.

Willcox Bank (6° 55'N., 118° 28'E.) is steep-to with a least depth of 4.8m; it lies about 5 miles SW of Tandotao Point. The bottom over the bank is clearly visible.

12.7 **Muligi Islands** (6° 53'N., 118° 24'E.) are two islands, the largest rising to a height of 120m, located 7 miles SSW of Cagayan Sulu Island. The channel between the two islands is clear, but transit should not be attempted.

A 14.6m patch was reported to lie 16.5 miles NW of Muligi Islands, and a 14.9m patch was reported to lie 2.5 miles S of the 14.6m patch.

Both islands are inhabited and have coconut plantations on them.

Muligi Patches (6° 55'N., 117° 58'E.), with a depth of 9.1m, are located 24.5 miles W of Muligi Islands.

Included in these dangers are two small detached reefs, with depths of 8.5m and 7.6m, lying about 15 miles WSW and 18 miles W, respectively, of Muligi Island.

Monmouth Shoals (6° 43'N., 118° 09'E.), located 7 miles S of the 8.5m depth above, consists of a group of several detached shoals with depths of 3.9 to 14.6m.

Depths of 22m and 18.3m, were reported to lie 4.25 miles and 11 miles E, respectively, of Monmouth Shoals.

Schuck Reef (6° 49'N., 117° 52'E.), with a depth of 6.4m, lies in an uncharted area 15.5 miles NW of Wanderer Shoal.

Mambahenauhan Islet (6° 32'N., 118° 31'E.), a brown rock with trees on its summit, rises to a height of 44m; it lies 21 miles SSE of Muligi Islands.

Caution.—Many dangers are charted on, and SW of a line connecting Manmouth Shoal and Shuck Reef. Less water than charted may exist over these dangers.

The Sulu Sea—Central Part

12.8 There are three main groups of islands and dangers lying in the central part of the Sulu Sea. The Cagayan Islands, the N group, lie on the S part of an extensive, steep-to, group of reefs that extend about 30 miles SSW from a position in 10° 00'N, 121° 24'E. The Cagayan Islands are wooded and partly cultivated.

The islands are reported to consist of smooth, level-topped hills. Depths about 183m from the edge of the reefs are over 183m. Tidal currents are weak around the island.

The reefs extending N from the islands dry at LW, as may best be seen on the chart.

Cavili Island and Arena Island, lying 27 to 35 miles SW of Cagayan Island, and Tubbataha Reefs, lying 47 to 64 miles SW of Arena Island, form the remaining groups.

Cagayan Island (9° 36'N., 121° 14'E.), the largest of the group, lies about 60 miles W of Negros Island. Cagayan is about 5.5 miles long, and has a smooth ridge, with a maximum height of 62m, extending nearly its entire length. A reef, which dries at LW, extends 0.9 mile SSW from the S extremity of the island.

A reef which dries, lies about 1.25 miles ESE from the S extremity of Cagayan. An extensive foul ground which may be seen on the chart lies between the island and the reef.

Cagayancillo (9° 35'N., 121° 13'E.) stands on the SE side of Cagayan Island, near its S extremity. The ruins of a fort stand on a bluff on the E side of town; there is a school and church nearby. A pier, suitable for boats at HW, extends into a cove on the NE side of the town.

Calusa Island (9° 37'N., 121° 01'E.), flat, sandy, and covered with coconut trees, lies 10 miles WNW of the S extremity of Cagayan Island.

The island is reef-fringed for about 0.2 mile. Several nipa houses stand on the S side of the island, but Calusa is not permanently inhabited.

The island was reported visible at 15 miles and reported to be a good radar target at 26 miles distant. The channel between Calusa Island and Cagayan Island is wide, deep, and clear of dangers.

12.9 **Calalong Island** (9° 35'N., 121° 14'E.) consists of a group of low hills with a steep rocky bluff on the S side, separated from the SE side of Cagayan Island by a narrow drying channel.

Anchorage can be taken by small vessels, with local knowledge, about 0.1 mile S of Calalong Island, in a depth of 9.1m. The anchorage is approached from the E through a constricted, unmarked channel.

Dondonay Island (9° 36'N., 121° 15'E.), about 3 miles long and narrow, lies with its SW end 0.5 mile E of the E extremity of Calalong Island. A foul channel separates the two islands. Dondonay has a bluff and rocky coast fringed on the SE by reefs.

Volata Island (9° 39'N., 121° 15'E.) and Tanusa Island are separated from the N end of Cagayan Island, and from each other, by constricted, foul channels, impassable even by small boats. Volata is low and flat; Tanusa is similar to Cagayan in appearance. A steep-to reef extends 0.25 mile off the W side of Tanusa.

Dauisan Reef extends 8.25 miles N from Tanusa Island. Some above-water rocks on its N and W sides mark the outer edge of the reef by day. A stranded wreck lies on Dauisan Reef, 7.5 miles N of Tanusa Island.

Boombong Island (9°45'N., 121°20'E.), the farthest NE of the Cagayan Islands, lies 7 miles NE of Tanusa Island.

The island, which is about 152m high to the top of the trees, is surrounded by a coral reef which extends 0.4 mile NE and 0.2 mile SE.

Manucan Island (9°39'N., 121°21'E.), small and reef-fringed, lies on a detached coral reef about 3.5 miles ENE of Dondonay Island. The island is flat and sandy, and is marked by a light. Shoal water extends 0.75 mile E of the reef.

Langisan Island is a bare rock lying on a drying reef, 2 miles W of Manucan Island. Anuling Island, similar to Langisan, is located on the same drying reef, 0.9 mile SSW of that island.

Igcauayan Reef, partly drying, is about 6 miles long; its S end lies about 0.6 mile NNW of Langisan Island.

The area between Igcauayan Reef and Dauisan Reef is foul.

Cabantayan Reef, which dries, extends 1.75 miles NW from a position 2.5 miles WNW of Boombong Island.

Foul ground extends NW from this reef to the NE extremity of Dauisan Reef, about 1.5 miles distant. Tide rips occur in the bight formed between Igcauayan Reef on the S and Cabantayan Reef on the N.

12.10 Catimogan Shoals (9°48'N., 121°20'E.), consisting of several patches with depths of 4 to 14.6m, lie with their S end 2.75 miles NE of Boombong Island and extend 7 miles N. There are considerable depths between the patches. A small reef, with a depth of 10.1m, lies about 9 miles NNE of Boombong Island. There is also an isolated reef, with a depth of 12.8m, located about 4.5 miles farther NNE.

Sultana Shoals (9°57'N., 121°23'E.) consist of a number of reefs and shoals, with depths of 1.5 to 18.3m, extending 5.6 miles N from a position about 10 miles N of Boombong Island. Several 2.7m patches exist near the N end of the shoals. There is deep water between the various Sultana Shoals.

Both Catimogan and Sultana Shoals are steep-to on their W sides, with depths of 183m within 0.5 mile.

Queen of the Sea Bank (10°24'N., 120°29'E.), lying 63 miles NW of Cagayan Islands, has a charted depth of 6.4m. The S and W sides of the shoal are steep-to, but on the N and E sides the bottom slopes gradually so that soundings give ample warning of an approach to the bank.

The bank seldom breaks in heavy weather. Breakers were reported about 2.5 miles W of the bank.

Piedra Blanca (10°26'N., 121°01'E.), a small, prominent white rock, 3m high, lies about 30 miles E of Queen of the Sea Bank.

The rock lies on the S edge of a shoal, with depths of 7.3 to 14.6m, which extends 0.5 mile E and 1.25 miles NW from the rock. The shoal is steep-to with depths over 91m existing a short distance from the edge of the shoal.

Sombrero Rocks (10°43'N., 121°33'E.), lying about 36 miles ENE of Piedra Blanca, appear as two black rocks of about the same height. When approaching from the N or S, the rocks appear to be in two parts, of which the W, 6.7m, is the higher.

The rocks are reported to be radar conspicuous at a range of 15 miles.

12.11 Cavili Island (9°17'N., 120°50'E.) and Arena Island are two coral islets lying on fringing reefs 28 and 32 miles, respectively, from Cagayan Islands. Cavili is 30m to the top of the trees and Arena Island is about 18m to the top of the trees.

It was reported that a prominent white tower was situated on Arena Island. Several detached sand cays lie on the reef S and W of Arena Island. A deep channel lies between the islets, but the reefs are steep-to and vessels should navigate with caution in their vicinity.

Cavili Island is reported to be a good radar target at 15 miles distant.

Tubbataha Reef (8°50'N., 119°53'E.) are two extensive and dangerous reefs separated by a channel 4 miles wide, lying about 48 miles SW of Arena Island.

North Islet (8°56'N., 120°02'E.), a rock 1.2m high, covered with grass and guano, lies near the N end of the NE reef. This reef, which is steep-to, encloses a lagoon in which there are depths of 5.5 to 33m; there is no entrance to the lagoon. A stranded wreck lies on the E side of the reef, 2 miles SSW of North Islet.

Central Islet, North Islet, and several small black rocks are the only objects on the NE reef that are above HW. At LW there are numerous sand cays or ridges, each about 91m long, visible along the entire length of the reef.

South Islet (8°44'N., 119°49'E.), about 1.6m high, lies at the S end of the SW reef. Black Rock, and several other black rocks and sand keys, all above-water, lie at the N end of this reef. The islet is marked by a light. A stranded wreck lies on the NW extremity of the reef. Another stranded wreck is reported to lie 0.5 mile NE of the light.

A depth of 262m was reported 13 miles SW of South Islet. It has been reported that the reefs appeared to have extended and increased in height. Extensive white colored patches of sand and coral, together with numerous palm trees, were sighted on the N and NE extremities of the NE reef, and three stranded wrecks were sighted on the W side. The lighthouse was difficult to identify by daylight.

Jessie Beazley Reef (9°02'N., 119°48'E.), a reef of broken coral about 1.8m high, encircled by a white sand cay near the middle, lies 14 miles NW of North Islet. The reef dries over a considerable distance.

The Sulu Archipelago

12.12 The Sulu Archipelago consists of a chain of islands and dangers that extend about 220 miles SW from Basilan Strait to Alice Channel off the NE coast of Borneo.

There are reported to be more than 300 islands comprising the archipelago. Numerous passages between the islands connect the Sulu Sea and Celebes Sea.

The Sulu Archipelago is divided into principal groups, and several smaller allied groups, for descriptive purposes. At the NE end of the island chain lie the Basilan Group, Jolon Group, and the Tapul Group in the center, and theTawitawi Group and the Sibutu Group at the SW end.

The most important ports are Isabella and Port Holland, on Basilan Island; Siasi, on Siasi Island; Jolo and Parang, on Jolo Island; and Port Bongas, on Tawitawi Island.

Winds—Weather.—The Northeast Monsoon prevails from November to April. Its direction is mainly between N and NE, tending more E during the close of the season. When fully established the Northeast Monsoon is very steady, but it is not as strong as the winds found farther N.

Freshening winds are generally of shorter duration and become less frequent as the Northeast Monsoon draws to a close.

Interruptions to the monsoon are more common in the vicinity of the Sulu Archipelago than elsewhere in the Philippine Islands. These interruptions are generally associated with shallow low pressure systems or typhoons.

The Southwest Monsoon is established by June, following a transition period of variable winds (mainly between NE and S), and continues until October. The winds are steadiest in July and August. They do not blow as steady as the winds of the Northeast Monsoon.

The transition period before the onset of the Northeast Monsoon is more gradual than that before the onset of the Southwest Monsoon.

Squalls are somewhat prevalent during the Southwest Monsoon, especially near the land. During these squalls the wind is gusty and sometimes reaches gale force. These squalls are often associated with thunderstorms.

Occasionally strong and squally SW or W winds blow for several days in a row in summer and early autumn, and at times even later in the year. These winds, known locally as collas, are generally associated with typhoons centered farther N. They are usually accompanied by rain.

During this period, shallow atmospheric depressions sometimes give rise to squally SW winds. Land and sea breezes are prevalent, especially when the prevailing monsoon is weak.

Typhoons form at times, especially in autumn and early winter, and bring rain. Their occurrence is rare as only 1 percent of all typhoons occur S of the parallel of 8° 00'N.

There are no pronounced wet and dry seasons in the Sulu Archipelago, the rainfall being fairly evenly distributed over the year. Normally the average number of days with rain per month is not less than 10 in spring and exceeds 15 from June to December.

Some rain always falls in each month from July to October, and February and April are known to have been rainless months. Torrential rains of short duration sometimes occur in spring and summer during thunderstorms.

Cloudiness is high in all months, but it appears to be at a minimum in April. The amount of clouds tends to increase with the warm and moist S winds.

Overcast skies, with low bases and poor visibility, occur when SW winds blow uninterruptedly for several days.

Visibility is generally good, except during heavy rain squalls. The occurrence of fog is rare. Continuous rain and low clouds may be responsible for only moderate visibility.

Temperatures are reported to be moderately high throughout the year. The difference in the mean temperature during the summer and winter does not exceed 17° C. The yearly average temperature is 26° C and the average maximum temperature is 30° C. The temperature seldom exceeds 35° C and seldom falls below 18° C.

Tides—Currents.—The tides are chiefly diurnal in the Sulu Archipelago. The diurnal range varies from 0.6 to 1.8m and the mean range varies from 0.6 to 1.7m.

The direction and velocities of the tidal currents in the various channels and passages are described with the particular area.

In general, strong tidal currents are experienced in the Sulu Archipelago because of the movement of the water over the shelf between the Sulu Sea and the Celebes Sea.

The currents in the Sulu Sea and Celebes Sea are not reckoned with in navigating in the close proximity of the Sulu Archipelago.

The Sulu Archipelago—North Part

12.13 The islands, reefs, and dangers which form the N part of the Sulu Archipelago may be roughly divided into two groups, namely the Pilas Group and the Pangutaran Group. They extend about 143 miles WSW from a position about 5 miles ENE of Teinga Island.

A deep channel, about 15.5 miles wide, separates the NE end of the Pilas Group from the SW end of Mindanao.

Pearl Bank, at the SW end of the Pangutaran Group, is separated from Talantam Shoal to the SW, by a deep channel which has a least width of 9 miles.

The Pilas Group, which lie W and NW of Basilan Island, extend 30 miles S and 26.5 miles WSW from **Teinga Island** (6° 54'N., 121° 35'E.).

The Pangutaran Group, and adjacent banks and shoals, extend 111 miles WSW from a position about 29 miles WSW of Teinga Island.

Extensive banks, as defined by the 20m curve, extend from and are found in the vicinity of the Pilas and Pangutaran Groups.

Numerous reefs, shoals, and dangers exist on these banks.

Tides—Currents.—Between Teinge Island and Basilan Strait, the flood current sets NW and the ebb SE.

In the channels between Pilas Island and Basilan Island the tidal currents are strong and attain a rate of 6 knots at springs. The flood current sets N and the ebb S.

Amongst the islands and banks of the Pilas Group, the tidal currents flow in various directions. Their general direction, when unobstructed, is NW during the rising tide and SE during the falling tide.

The tidal currents set in various directions near the islands and shoals of the Pangutaran Group.

In the unobstructed areas the currents set NNW during the rising tide and SSE during the falling tide. The rate seldom exceeds 2 knots. Slack water generally occurs about 1 hour after HW and LW.

On the extensive bank which lies NE of Pangutaran Island the tidal currents are strong and irregular. They set NW during the rising tide and SE during the falling tide, except where interrupted.

The flood current sets WNW and the ebb current sets ESE through the fairway of Pangutaran Passage. The maximum rate is 4 knots. In the W and E approaches to the channel the flood current sets W and the ebb E at about the same rate. In the channel E of Pangutaran Island the flood currents sets N and the ebb S.

In the channels between the islands E of Pangutaran Island the flood current sets NW and the ebb current sets SE; the rate is from 2 to 3 knots.

Among the islands and banks between Pangutaran Passage and Pearl Bank, the tidal currents take various directions. Their direction, when unobstructed, is NNW during the rising tide and SSE during the falling tide.

The tidal currents over the extensive bank lying between Pangutaran Passage and Cap Island are reported to be strong. They set NW during the rising tide and SE during the falling tide, except when modified by the numerous reefs and shoals in the area.

In the vicinity of **Sail Rock** (5˚ 57'N., 120˚ 13'E.), the flood current sets N and the ebb current S at a rate of 3 to 4 knots and are generally semidiurnal in character.

The tidal currents are strong between Cap Island and **Laparan Island** (5˚ 54'N., 120˚ 00'E.). The flood current sets N and the ebb S.

In the channel between **Doc Can Island** (5˚ 53'N., 119˚ 58'E.) and Pearl Bank, the flood current sets NNW and the ebb SSE at a rate of about 3 knots.

Strong rips and swirls are found in the channel. North of Pearl Bank the tidal current sometimes attains a rate of 6 knots. Off the W side of Doc Can Island the tidal currents follow the general direction of the 40m curve.

During the flood current a NW set was observed at a position about 4 miles SW of the island, a N set was observed W of the island, and a NE set was observed N of the island. The ebb current follows the reverse of the above directions. S of Doc Can Island and inside the 200m curve the ebb current was observed as setting ESE.

Slack water usually occurs in the above channel from 1 hour before to 1 hour after local HW or LW, but the time interval varies occasionally from 2 to 3 hours either way.

In the channel between Pearl Bank and Talantam Shoal the flood current sets NW and the ebb SE at a rate of about 1.75 knots.

The Pilas Group

12.14 The Pilas Islands are a group of islands lying W and NW of Basilan Island.

Pilas Channel, between Pilas Island and Mataja and Balukbaluk Islands on the E, is 3.5 miles wide, deep and clear of dangers. The tidal current at springs sets N and S at a reported velocity of 6 knots.

Pilas Island (6˚ 38'N., 121˚ 36'E.), the largest island of the Pilas Group, is densely wooded. Two high hills lie near the N end of the island, but S of the hills the land is flat and almost submerges at HW.

Tamila Rock, 1.2m high, lies about 0.5 mile NW of the island. Several dangers lie off the N and NE sides. Detached patches, with depths 3.7 to 4m, lie 3.25 miles and 5 miles SW and WSW of the S extremity of Pilas. A narrow bank of shoals extends 10 miles SSE of Panducan Point, the S extremity of the island.

Tagutu Island (6˚ 39'N., 121˚ 38'E.) lies about 0.5 mile E of Pilas Island; they are separated by a channel that is deep and free of charted dangers.

Mataja Island (6˚ 34'N., 121˚ 41'E.), a heavily-wooded island, lies 4.25 miles ENE of Panducan Point. A spit, with a depth of 2.7m at its outer end, extends 0.6 mile N of the island. A light is shown on the SE side of Mataja Island. A shoal, with a charted depth of 7.3m, lies 2.5 miles SSW of the light.

Balukbaluk Island (6˚ 40'N., 121˚ 42'E.), 3.5 miles NNE of Mataja Island, rises to a height of 160m in its N extremity; its S end is low. Tide rips form off the N end, and SE side of the island.

12.15 Manangal Island (6˚ 38'N., 121˚ 35'E.) lies within the 20m curve, 0.5 mile W of Pilas Island; it rises to a height of 115m in its SW part. Two shoal patches, as may best be seen on the chart, lie in the S part of the channel between Pilas and Manangal Islands.

Anchorage, protected from wind and sea, except for a narrow sector from due S, may be taken in the channel between Pilas and Manangal Islands, in depths of 9 to 11m, sand and coral.

Anchorage may also be taken 0.5 mile N of Manangal, in a depth of 20m. Tidal currents are weak at the anchorages.

Minis Island (6˚ 37'N., 121˚ 31'E.), 3.25 miles WSW of Manangal Island, is the farthest W of several small islands lying W of Pilas Island; their positions may best be seen on the chart.

Puju Reef (6˚ 40'N., 121˚ 34'E.), a small drying reef, lies 3.25 miles W of the W extremity of Pilas Island; foul ground extends about 1 mile N from the reef. Bantolinos Islets lie 2.5 miles W of Puju Reef.

Mindoro Shoal (6˚ 35'N., 121˚ 27'E.), with a least charted depth of 5.5m, lies 4.25 miles SW of Minis Island.

There are detached shoal patches charted NE, W, and SW of Mindoro Shoal.

The **Sangboy Islands** (6˚ 50'N., 121˚ 33'E.) are two small islands separated by a deep, constricted channel, located 8.25 miles NNW of Pilas Island. Each island is low in its S part but the W island rises to a height of 245m and the E island rises to a height of 168m.

The shores are sandy except in their N parts which are rocky; the islands give a good radar return at 22 miles distant. Swirl Reef, 0.5 mile W of the W island, has a charted depth of 4m. Tide rips form off the N sides of the islands.

12.16 Teinga Island (6˚ 54'N., 121˚ 35'E.), a low, densely wooded island, lies 3 miles NNE of Sangboy Islands. A 10.4m patch lies 2.5 miles NE of Teinga Island.

Dassalan Island (6˚ 45'N., 121˚ 28'E.), 5.75 miles SW of Sangboy Islands, has several sandy beaches. There is a lagoon on the W side which small boats may enter at HW.

Kaludlud Island, 1 mile WNW of Dassalan Island, is low, flat, and densely wooded.

A bank, with depths less than 5.5m, extends 2.75 miles W from Kaludlud Island. Griffin Rocks, with a depth of 3m, lie near the outer end of the bank.

Brutus Reef (6˚ 45'N., 121˚ 20'E.), with a least charted depth of 2.1m, lies 3.75 miles WSW of Griffin Rocks.

Salkulakit Island (6˚ 41'N., 121˚ 23'E.), 18m high, lies 5.5 miles SW of Dassalan Island. Lakit Islets comprises three small rocky islets which lie 1 mile NW of Salkulakit Island.

There are several isolated shoal patches, with depths of 4.9 to 8.5m, lying between the above islands and Griffin Rocks, 5 miles N; these shoal areas may best be seen on the chart.

Halcon Rock (6°25'N., 121°23'E.), which dries 1.5m, lies 17 miles SW of Pilas Island; the rock is steep-to. Tide rips form in the vicinity of Halcon Rock.

Pabunuan Shoal, with a least charted depth of 3.7m, lies 5 miles SW of Halcon Rock. The water in the vicinity of the shoal is clear and the bottom can usually be seen up to 18.3m. Tide rips and strong and irregular currents are found in the area of the shoal.

The Pangutaran Group

12.17 The many islands of the Pangutaran Group, reefs, rocks, and shoals, extend WSW for a distance of about 100 miles, from a position about 35 miles W of Pilas Island.

The islands of this group are low, 2 to 6m high, and densely wooded with mangroves and other trees. The characteristic clumps of trees on these islands form excellent landmarks.

Between the islands of the Pangutaran Group generally set in a NNW and SSE directions following the various channels.

There are no typhoon anchorages over the various banks adjacent to the group, but anchorages, dependent on the direction of the wind and sea, are given.

Caution is advised as tide rips, and strong tidal currents exist throughout this area, as may best be seen on the chart.

Pangutaran Island (6°19'N., 120°32'E.), the largest of the group, is 6m high, and densely wooded. The N and E sides of the island are fringed by coral, with sandy beaches backed by low coral cliffs; there is a long stretch of mangrove on the E side.

Panducan Island (6°17'N., 120°39'E.), 2.5 miles E of Pangutaran Island, is low and densely wooded. The island lies on the W edge of a bank that extends about 43 miles NE.

Kulassein Island (6°25'N., 120°42'E.), 5 miles NNE of Panducan Island, consists of a mangrove swamp with a small area of densely wooded solid land on the N and W sides. The island is fringed with coral and is steep-to on the N side.

A shoal, with a least depth of 6.4m, lies about midway between Panducan and Kulassein Islands.

Tide rips occur in the area W of Kulassein and off the N end of Pangutaran.

Teomabal Island (6°20'N., 120°51'E.), 10.5 miles ENE of Panducan Island, lies near the SW end of a bank which has a least depth of 7.6m. The island consists of a coral and sand beach fringing a mangrove swamp, which encloses a large lagoon. Boats may enter the lagoon from the NW at HW.

Teomabal Bank, with a least depth of 8.5m, lies 6.5 miles NE of the island. Tide rips, whirlpools, and eddies form in the vicinity of these banks.

Tubigan Island (6°26'N., 120°47'E.), 3.5 miles E of Kulassein Island, is above water on the W side, but consists of mangrove swamp and a salt water lagoon on its E side. Foul ground extends 0.75 mile NNW of the island. A shoal area, with least depths of 3.4m, lies 1.75 miles NNE of the island. Tubigan is said to give a good radar return at 14 miles distant.

Pangutaran Reef (6°33'N., 120°58'E.), a large area of shoals marked by tide rips and breakers, occupies the SW part of the bank extending NE from Panducan Island.

There is a least depth on the reef of 2.1m, which exists 12.5 miles NE of Tubigan Island. Tidal currents on the bank are strong and irregular, but generally set N and S.

12.18 Favorite Bank (6°38'N., 121°04'E.), at the NE end of the aforementioned bank, has a least depth of 7.6m. A 9.1m patch lies at the N extremity.

Heavy tide rips mark the bank, especially during the Northeast Monsoon, or when tide and wind are in opposition. It is not advisable for vessels to cross the bank.

Pangutaran Passage (6°12'N., 120°30'E.), nearly 4 miles wide between the 20m curves, is a deep passage used by vessels enroute between Jolo and **Sandakan** (5°50'N., 118°07'E.), on the NE coast of Borneo.

Although the islands bordering the passage are low, the characteristic clumps of trees form excellent landmarks.

The N side of the passage is formed by the steep-to S sides of Pangutaran and Panducan Islands. The S side is formed by North Ubian, Ticul, and Usada Islands.

An 8.5m shoal, 1.5 miles NW of Usada, is the only offshore danger in Pangutaran Passage.

Tidal currents run with the channel and attain a maximum rate of 4 knots.

North Ubian Island (6°09'N., 120°26'E.), 5 miles SSW of Pangutaran Island, is reef-fringed and bordered by mangroves and shows a light. Soang Buna, a small settlement, stands on the W side of a shallow lagoon, entered from the E side of the island by two channels.

Ticul Island, planted with coconut palms, 34m to the top of the trees, lies 1 mile E of North Ubian Island, with a clear and deep channel between them.

Usada Island, 3 miles E of Ticul Island, is fringed with coral. The greater part of the island consists of mangrove, with only a strip on the E side being solid land.

Tidal currents over the extensive bank extending SW from North Ubian Island and Usada Island are strong, setting NW and SE, but both rate and direction are modified by the numerous shoals in the area.

A bank, as defined by the 20m curve, extends about 18 miles SW and S of North Ubian Island. There are several small islands and shoals on this bank; it should not be crossed without local knowledge.

Apo Lambu Reef (6°00'N., 120°28'E.), 8.5 miles S of North Ubian Island, is the farthest SE of these dangers.

This dangerous reef has a depth of 2.1m. Basbas Island and Cunilan Island lie 3.5 and 6.5 miles NNE, respectively, of Apo Lambu Reef.

Tubalubac Island (5°59'N., 120°24'E.) is located on a bank, 2.75 miles WSW of Apo Lambu Reef. A shallow lagoon is formed in the island.

12.19 Tablas Shoal (5°55'N., 120°21'E.), which is dangerous and steep-to on its SE side, lies 3.25 miles SW of Tubalubac Island. There is a least depth of 5.8m charted in the S part of the shoal. The sand bottom of the shoal can generally be seen.

Datubato Islands (5°55'N., 120°17'E.), a group of islets on an extensive reef, lie 1.25 miles W of Tablas Shoal. A lagoon, with depths up to 3.7m, is formed within the islets.

Sail Rock (5° 57'N., 120° 13'E.), which is prominent, is an excellent landmark; it is 20m high. Above and below-water rocks lie within 0.1 mile of Sail Rock, and a patch with a depth of 0.3m, lies 0.25 mile SW of the rock on the edge of the 20m curve.

Tidal currents W of Sail Rock set N and S at a velocity of 3 to 4 knots.

Cap Island (5° 58'N., 120° 07'E.) lies 5.5 miles W of Sail Rock. It is a low, coral atoll consisting chiefly of mangrove swamps and shallow lagoons.

The coast, except for short stretches of sand and coral beaches at the N and S ends, consists of mangroves covered at HW. Coral reefs extend about 0.15 mile offshore from the island.

Vessels have ample room to pass between Cap Island and Sail Rock, clear of a 10m shoal in mid-channel.

Vessels passing W of Cap Island keep at least 1 mile offshore.

Deatobato Island (5° 33'N., 120° 04'E.), low, wooded with trees from 11 to 15m high, is located 3 miles SW of Cap Island. A large part of the interior of the island is submerged at HW. The coast is fringed by coral and sand beaches. Coral reefs extend from 45 to 91m off the W, N, and NE sides of the island's HW line.

A spit, with depths of 0.3 to 5.5m, extends 2.25 miles NNW from the island. A 5.8m shoal lies 0.4 mile S of the island. The S end of Deatobato Island should be given a berth of at least 0.75 mile.

There is anchorage off the E and NE sides of Deatobato Island and off the E side of Cap Island, but anchorage is not recommended off the W sides of these two islands due to strong tidal currents and poor protection.

12.20 Laparan Island (5° 54'N., 120° 00'E.), 3 miles W of Deatobato Island, is a large coral atoll reef overgrown with mangroves. A narrow, coral reef about 1m high, continuous except for one break, lies up to 137m off the mangroves on the S and SE sides.

Drying coral reefs extend 0.3 mile off the other sides of the island, including a detached clump off the NW side.

It was reported that the island is a good radar target at 10 miles distant. Anchorage off the E side of the island is not recommended.

Doc Can Island (5° 53'N., 119° 56'E.) is the farthest W of the islands forming the Pangutaran Group. The interior of this low, wooded island consists of salt ponds and swamps in the E part and a large lagoon is the W part.

The E half of the S side of the island is fringed by a coral barrier reef. Reefs extend 0.25 mile beyond the HW line on the N and E sides.

Anchorage can be taken off the NW and S sides of the island. Strong tidal currents and tide rips occur in the channel between the Doc Can and Laparan Islands and off the shoal extending NW from Doc Can Island.

Pearl Bank (5° 50'N., 119° 42'E.) is an extensive shoal of atoll formation located 10.5 miles WSW of Doc Can Island. The greater part of the bank covers at some stage of the tide, but drying reefs define the outer limits. The N and S sides of Pearl Bank are fairly steep-to.

Pearl Bank is a good radar target at 13 miles distant.

A chain of wooded, low coral islets lie along the E, SE, and S sides of the bank. A narrow coral barrier reef, 1m high, lies 0.25 mile off the S side. The most conspicuous of the wooded islets are Zau Island and Lahangan Island on the E side of the bank, and Taja Island, on the W side.

Pearl Bank Light stands on the NE end of Zau Island. The interior of Pearl Bank consists of scattered reefs and shallow lagoons. Shoals, with a least depth of 2.7m, lie 1 to 1.5 miles SW of Taja Island.

Anchorage can be taken on the banks NE, SE, and W of Pearl Bank.

When approaching Pearl Bank the higher SW islands of the Pangutaran Group will be sighted 10 to 12 miles distant. Pearl Bank is identified by the chain of low islands along its SE edge, also by the lighted tower.

Pearl Bank should be approached with caution and passed on the E side, with due regard for the irregular, strong tidal currents in the area.

A group of nine small islands and adjacent dangers lie about 8 miles SSE of **Datubato Island** (5° 55'N., 120° 17'E.), and extend SSW for a distance of 14.5 miles.

The islands, of coral atoll formation, are about 1.8m high and extend from Dammai to Bambannan.

The S side of the nine islands, with the exception of Bilingan, are fringed with steep coral or sand beaches which afford good landing for boats.

The other sides of the islands are fringed with mangroves and strewn with rocks or bound by coral barrier reefs.

Numerous shoals lying between the islands are visible in good weather, as discolored water is reported to mark their location.

12.21 Dammai Island (5° 48'N., 120° 24'E.), the farthest N of these islands, lies at the E end of an extensive bank bound by the 20m curve. The interior of the island is lagoons bound by mangrove swamps. The 20m curve lies 0.15 mile off the SE side of the island. Singaan Island and Dasaan Island lie on this same bank 0.5 mile S and 2.75 miles SSW, respectively, from Dammai Island. A 4m patch lies on the bank, 1.75 miles W of Singaan.

Mamanuc Island (5° 40'N., 120° 21'E.) is located on a small bank 4 miles SSW of Dasaan Island. Walan Island lies 4.5 miles NW of Mamanuc Island. The 20m curve lies within 0.3 mile of Walan. A shoal, with a depth less than 1.8m, lies 2 miles NW of Walan.

Bambannan Island (5° 38'N., 120° 17'E.), the farthest S of these islands, lies 4.5 miles SW of Mamanuc Island.

The island is fringed by a reef except for the mangroves at the N end. Two small islets lie about 0.4 mile and 1.2 miles N of Bambannan Island.

Bilangan Island (5° 42'N., 120° 13'E.), 4.75 miles NNW of Bambannan Island, is the westernmost island of the group. A coral reef, partly above water, lies 1 mile W.

Tidal currents set in various directions near shoals and islands of this group, but in unobstructed areas the currents set NNW to SSE with a velocity of about 2 knots.

Anchorage, in moderate weather, can be taken by vessels with local knowledge off Bambannan and Bilangan Islands and off the NE and SW side of Dammai Island, coral and sand bottom.

Basilan Island and Basilan Strait

12.22 The Basilan Group, the Tapiantana Group, and the Samales Group lie at the NE end of the Sulu Archipelago. The islands lying in Basilan Strait, off the coasts of Basilan Island, are described with that island as part of the Basilan Group.

Winds—Weather.—In the vicinity of **Basilan Strait** (6˚ 50'N., 122˚ 00'E.) E and NE winds, accompanied by clear weather, occur in January. The same conditions prevail during February, March, and April, but there are occasional NW breezes of short duration.

In May and June the wind blows from the SE and is more or less variable. Squalls occur during June, and towards the end of the month, fresh SW breezes commence. SW winds of some strength blow during July, August, and September.

These winds are accompanied by rain and foul weather. Gales occurring at this time seldom last more than 3 or 4 days. N and NE winds occur during November and December and the Northeast Monsoon becomes more or less steady during the latter month.

Throughout the year, when the seasonal wind is not strong, land and sea breezes are prevalent.

Tides—Currents.—Tidal currents in Basilan Strait follow the direction of the channel, and near the islands and shoals they follow the edges of the reefs. Their general direction, when unobstructed, is W during the rising tide and E during the falling tide. The rate is 2 to 3 knots at neaps from 5 to 6 knots at springs. The flood strength occurs about 3 hours after LW at Cebu, and the ebb strength occurs about 3 hours after HW at the same port.

The tidal currents have been observed setting in the reverse directions during the months of November and December.

They have also been observed as setting in the same direction for 24 hours even though two high and two low tides occurred on that day.

The turn of the currents takes place later in Basilan Strait than at Zamboanga. The change begins first on the coast of Mindanao, then in Basilan Strait, and finally on the coast of Basilan Islands.

Strong and irregular tidal currents and rips are found in the vicinity of the shoals and banks off the NW side of Basilan Island. Close W of Malamaui Island the currents set N on the rising tide and S during the falling tide, the rate diminishing as the distance from the island increases.

Strong and irregular tidal currents are found off the W coast of Basilan Island. These currents, which attain a rate of 3 knots, set N during the rising tide and S during the falling tide. Swirls and rips mark the shoals and the projecting points of the various islands. Between Mataja Island and Sicagot Island slack water occurs at about the time of high and LW at Cebu.

The strength of flood occurs about 3 hours after LW at Cebu and the strength at ebb occurs about 2 hours after HW at that port. Between Basilan Island and Tamuk Island, slack water occurs about 1 hour before high and LWs at Cebu. The strength at flood occurs about 2 hours after LW at Cebu, and the strength at ebb occurs about 2 hours after HW at that port.

The tidal currents in Bihintinusa Channel and Tapiantana Channel are strong. They set W during the rising tide and E during the falling tide. In the channels among the islands of the group, the tidal currents are strong but very irregular.

Eddies are sometimes found along the shores of the islands. Slack water occurs about 45 minutes before high and LW at Cebu. The strength at flood occurs about 2 hours 30 minutes after LW at Cebu and the strength at ebb occurs about 2 hours after HW at that port.

The tidal currents in the channels between the islands of the Samales Group are strong. They set in a general W and NW direction during the rising tide and in opposite directions during the falling tide. A rate of 3 knots has been observed between the NW extremity of Tonquil Island and Mamad Island.

The currents turn from 30 minutes to 2 hours after high and LW. The tidal currents are very strong in the narrower channels, especially in those with the main axis lying in a NW to SE direction. The tidal currents are weak in Ton Sandungan Channel, between Bucuta Island and Bulan Island.

Overfalls and rips, dangerous to small craft, are found in the vicinity of shoals and in areas where there are abrupt changes of depth. This is especially so in the N part of the Samales Group.

Strong tidal currents, whirls, and eddies are found in the channel separating the Samales Group from the Jolo Group.

Depths—Limitations.—Basilan Strait, which connects the Sulu Sea with Moro Gulf and separates Basilan Island from Mindanao, has depths of 18.3m and over in the fairway. Santa Cruz Bank and Santa Cruz Islands, on the Mindanao side of the strait, and Luzon Reef, on the Basilan Island side of the strait, greatly reduce the navigable width of the strait and divide it into two deep channels.

The channels between Basilan Island and the various islands lying N and NE of the E end of that island are deep and clear of dangers in the fairway. The channels between the various islands are also deep and clear of dangers.

The channels between the W side of Basilan Island and the various islands off that coast are deep and clear of dangers in the fairway. Deep channels separate the various islands, but numerous dangers lie in their vicinity.

Tapiantana channel has depths of 12.2m and over in the fairway. The 200m curve lies close to the S side of the Tapiantana Group.

The channels between the various islands of the group are fairly deep in the fairway, but some dangers exist in their vicinity.

Irregular depths of 12.2m and over are found in the channel separating the Tapiantana Group from the Samales Group.

The 200 curve lies close off the S side of the Samales Group. Broken ground and numerous dangers lie N of the group and between the islands of the group.

The channel between Tatalan Island and Bucutua Island, which is used by vessels plying between Mindanao and Jolo, is deep and clear of dangers in the fairway.

There are other deep channels lying between some of the islands of the group, but they are not recommended because of the strong tidal currents and rips in their vicinity.

The channel separating the Samales Group from the Jolo Group is deep and clear of dangers in the fairway.

Caution.—A wreck dangerous to navigation, reported 1997 lies in position 6˚ 53'N, 122˚ 03'E, close E of Little Santa Cruz Island.

Basilan Island

12.23 Basilan Island (6° 33'N., 122° 04'E.) is separated from Mindanao Island by Basilan Strait which is 8.5 miles wide. Basilan is the largest and most important of the Basilan Group.

Basilan Peak (6° 33'N., 122° 04'E.), 1,011m high, is the highest point on this densely wooded, mountainous island.

The shores of the island are low, consisting of a fringing belt of sand and coral, on which mangrove swamps have formed. There are no large rivers and many of the small rivers emptying into the sea can only be entered at HW. Basilan Island is a Sub Port of Entry.

Basilan Peak, near the center of the island, is the most conspicuous natural feature.

Mount Matanal (6° 37'N., 122° 18'E.), rising to a height of 630m, 1.5 miles W of the island's E extremity, is also prominent. Mount Sining Capan and Mount Cobung, which is cone shaped, lying 5.75 miles WNW and 7.75 miles WSW, respectively, of Mount Matanal, are prominent. Clouds obscure the higher peaks.

Batupare Point (6° 45'N., 122° 04'E.), at the N end of Basilan Island, is low and partly wooded. The terrain within the point rises to a heavily wooded peak, 216m high, about 1 mile inland. The 20m curve lies close off the point.

Luzon Reef (6° 47'N., 122° 04'E.), with a least charted depth of 6.4m, lies on the S side of Basilan Strait, 1.75 miles N of Batupare Point.

A patch, with a depth of 10.4m, lies 2 miles ENE of Batupare Point. There are tide rips on Luzon Reef, and the shoal point above.

12.24 Calagusang Point (6° 43'N., 122° 07'E.) is located 3 miles SE of Batupare Point. In the bay between these points there are several shoals and a rock, awash.

Look Sambang Bay is 3 miles SE of Calagusang Point. The Gubauan River and the Ligundi River empty into the S part of the bay.

Lamitan (6° 40'N., 122° 08'E.), located 1.25 miles up the Gubauan River, is the principal town on the NE coast of Basilan Island. It is a port of call that is for coastal shipping. Logs are towed in rafts and brought alongside vessels anchored in the bay. There is a lumber mill near town.

A pier, with a berthing face 12m long, with a depth alongside of 6.4m, is located at **Kulibato Point** (6° 40'N., 122° 10'E.).

Anchorage, exposed to N and E weather, can be taken in Look Sambang Bay. There are depths of 13.1 to 27m, but the recommended anchorage in the bay lies 0.25 mile off the pier, in a depth of 18.3m.

Coco Island (6° 44'N., 122° 15'E.) lies 6.75 miles NE of Kulibato Point. The island is reef-fringed and densely wooded; it rises to a height of 140m. Little Coco Island lies 0.25 mile N of Coco Island. The 20m curve encircles both islands and lies within 0.1 mile of Little Coco Island.

Lanhil Island (6° 45'N., 122° 22'E.), 6.5 miles ENE of Coco Island, rises to a peak 171m high in its SW part; the E part of the island is low-lying.

Sibago Island (6° 45'N., 122° 24'E.) lies 1.5 miles SE of Lanhil Island; they are separated by a deep channel clear of dangers. Sibago is low and covered by vegetation; it has two high hills. The hill farthest E, marked by a light, is 192m high. A drying reef fringes the island and a spit extends off its SE side.

Matanal Point (6° 38'N., 122° 20'E.), the E extremity of Basilan Island, is located 10.5 miles ESE of Kulibato Point. The coast between the two points is backed by some of the highest peaks on the island. Tide rips form off the point.

Takut Tangug Bay (6° 32'N., 122° 14'E.) indents the coast from a position 2.5 miles SW of Matanal Point, to the SE extremity of Basilan Island, about 10 miles distant.

The shores of the bay are lined by mangroves and fringed by a narrow reef.

Wooded eminences are prominent which are backing the coast.

Extensive shoals, with depths of 0.3 to 11m, extend SW across the bay where a narrow, deep channel at the NE end leads across the shoals to an anchorage area.

Depths of 18 to 37m exist at the anchorage, which is open E and SE, but protected from sea and swell.

A small, sheltered anchorage for small craft is available in the mouth of the **Kandiis River** (6° 36'N., 122° 16'E.), where the depth is 3.7m, mud.

Bojelebung Channel (6° 31'N., 122° 12'E.), a deep passage 0.2 mile wide, leading through drying reefs to the anchorage off Bojelebung, is entered 3.5 miles N of the SE extremity of Basilan Island.

Anchorage.—Anchorage can be taken off **Bojelebung** (6° 31'N., 122° 11'E.), the principal town on the E coast of Basilan, about 0.2 mile offshore, in depths of 29 to 31m.

Anchorage may also be taken about 1.25 miles SSE of Bojelebung, W of the drying reef extending SSE from the channel, in a depth of 22 to 27m, sand. Local knowledge is required.

Takippamasilaan Island is a small, crescent, narrow ridge of sand and coral, lying at the SE end of the drying reef, above. It lies 2.25 miles SE of Bojelebung.

Directions.—When approaching Bojelebung Channel, steer for the grassy hill 207m high rising SW of town, bearing 268°, which leads in mid-channel between the reefs; then change course to the N or S for the anchorages.

12.25 Kauluan Island (6° 28'N., 122° 13'E.), close E of the SE extremity of Basilan and just over 1 mile SSW of Takippamasilaan, is mostly a mangrove swamp, encircled by a drying reef.

Kauluan Channel, entered 0.75 mile SW of the W end of the islands, leads 4 miles N between the W side of Kauluan Island and the drying reef N of Takippamasilaan.

The channel, which is 91m wide in places, is tortuous and has a depth of 5.8m in the S entrance.

From Kauluan Channel, the S coast of Basilan Island extends 14.5 miles WSW to Mangal Point, the S extremity of the island. The coast is fringed by mangrove swamps which several rivers discharge through. The E side of the S shore is steep-to, with the 20m curve lying about 0.2 mile off the mangrove swamps.

Amoyloi Reefs (6° 26'N., 122° 08'E.) consist of two drying reefs lying 0.5 mile offshore. An islet lies on the E reef and shoals extend N from this reef to the coast of Basilan.

Amoyloi Village (6° 26'N., 122° 07'E.) is located on the coast N of the W reef. Anchorage can be taken S of the village, in

depths of 27 to 37m. The anchorage is approached between the bank extending 0.5 mile W from the W reef and the 2.7m shoal lying 1.5 miles WSW of the village. The channel between dangers is 0.1 mile wide.

The E approach channel, leading between shoals 0.5 mile E of Amoyloi, is only used by craft with local knowledge.

Bihintinusa Island (6°24'N., 122°02'E.) lies 4.5 miles WSW of Amoyloi Reefs. It is separated from Basilan by Bihintinusa Channel, which is 0.75 mile wide between the shore reefs.

A bank, with depths less than 5.5m, extends 1.75 miles ENE of Bihintinusa Island.

The **Mangal River** (6°25'N., 121°58'E.) empties into the sea 5.25 miles W of Tumajubun Point. Shallow draft vessels can reach the village of Mangal.

Abongabong Peak (6°30'N., 121°59'E.), rises to a height of 912m, about 5 miles NNE of Mangal; the peak is conspicuous.

Mangal Point (6°24'N., 121°57'E.), 1 mile W of the Mangal River, is the S extremity of Basilan Island. The point is a densely wooded strip of sand.

A pier, with a depth of 3m at its head, lies 0.5 mile E of the point.

12.26 The SW coast of Basilan extends about 7.5 miles NW to **Sahap Point** (6°30'N., 121°52'E.). From Sahap Point the coast trends in a N direction for 2.75 miles to Port Holland. The coast is fringed by a mangrove swamp which has several rivers flowing through it to the sea.

Some of the rivers are used for logging operations and launches towing rafts of logs are frequently met off this coast.

Lahatlahat Island (6°26'N., 121°55'E.) lies at the NW end of a coral reef, 0.5 mile offshore, 2.5 miles NW of Mangal Point. Canas Island, separated from Basilan by a deep narrow channel, lies 1 mile NW of Lahatlahat Island.

Canas Shoal, with a depth of 4.6m, lies 0.5 mile W of Canas Island.

Cancuman Island is located 3 miles W of Canas Island.

Tamuk Island (6°28'N., 121°49'E.), 75m to the top of the trees, lies 1.25 miles W of Cancuman Island.

12.27 Port Holland (6°33'N., 121°52'E.) (World Port Index No. 59780), a lumber export harbor, is located at the SE end of Maluso Bay. The harbor is small and exposed to winds from the S and W.

Tides—Currents.—Tidal currents, with a velocity of 2 to 3 knots, change from a NE set on the flood to a SW set on the ebb tide.

The change occurs 0.5 hour after high and LW, with the stronger SW current setting across the face of the principal wharf.

Depths—Limitations.—Depths of 9.1m and more exist in the entrance channels to the port.

Great Gounan Island (6°33'N., 121°52'E.), lying 0.1 mile NW of the main wharf, is a wooded but cultivated small island.

There is a depth of 11.9m in the channel from the island to the main wharf.

Little Gounan Island, lying 0.25 mile NW of Great Gounan, is partly cleared. A reef, with a depth of 8.5m, lies 0.35 mile N of Little Gounan Island and a wreck, with mast showing, lies 1.25 miles NNW of the island.

Port Holland Wharf is 61m long. A T-head pier, 18m long, is located 30m W of the wharf. A row of dolphins extends from the wharf to the pier and 27m beyond it, giving a total berthing face of 137m.

There were reported depths of 9.1m at the W end of the berths and 7.3m at the E end. Mooring lines are run to pile clusters E of the wharf and to a small boat landing 61m W of the pier.

Pilotage.—Pilotage is optional, but is recommended for vessels not having local knowledge. The pilot from Isabela will board inbound vessels off Little Gounan Island if advance notice is given.

Anchorage.—The recommended anchorage lies in mid-channel N of the wharf, in depths of 11 to 22m, but the swinging room is limited.

Vessels can also anchor in the outer part of Maluso Bay, in depths of 9.1m and over.

Directions.—Port Holland Wharf can be approached N or S of Great Gounan Island. Several numbered oil drums buoy the sides of both channels. However, the drums are often missing from their stations.

The N approach channel should be used during the period of rising tide, the S channel during the falling tide.

Local knowledge is necessary in the N channel due to shoals lying adjacent. Vessels in transit of the N approach, pass 0.5 mile N of Little Gounan Island, avoiding the 8.5m patch, and follow the buoyed channel (black buoys to port).

In the S approach, pass in mid-channel between Great Gounan Island and the small peninsula forming Port Holland. No. 1 buoy is moored close S of the island and No's 2 and 4 buoys mark the channel.

12.28 From Port Holland the coast of Basilan trends NNW for a distance of 6 miles then continues NNE for a distance of 5 miles to Basilan Point.

Maluso Bay (6°34'N., 121°51'E.) is formed between a point close S of Great Gounan Island, and a point about 3 miles NNW.

The shores of Maluso Bay consist of mangrove swamps which several small rivers empty into. Within the 20m curve there are several dangerous rocks and shoals.

There are coral heads, awash, at the head of the bay. A bank, with depths of 8.5 to 11m, fronts the middle part of the bay, about 1 mile offshore. Anchorage can be taken in the bay.

Numerous small, low islands with adjacent shoals lie in the approaches to Maluso Bay.

Takela Island (6°32'N., 121°50'E.) and Goreno Island lie 1.75 miles offshore, **Langas Island** (6°32'N., 121°46'E.), 6.5 miles offshore. Several islands lying between the inner and outer islands have navigable channels between them.

A bank, with depths of 4 to 8.2m, extends 1 mile SE from **Kaluitan Island** (6°36'N., 121°47'E.). A shoal, with a depth of 7.3m or less, lies 2.25 miles W of Langas Island. The shoals are generally marked by swirls and tide rips.

Landugan (6°35'N., 121°49'E.) is situated close N of Maluso Bay. The logging camp has a T-head pier with a face about 15m long and depths of 4 to 5m alongside. Logs are shipped by barge to Samboanga.

Pangasahan Island (6°37'N., 121°48'E.), about 1 mile in length, is located in a bight 1.75 miles NW of Landugan. It is

separated from Basilan by a narrow channel with a least depth of 7.6m at the N end. A 5.5m patch lies 1 mile NNW of the island. A wooden pier, located close W of the mouth of the Pangasahan River, has a berthing face about 29m long with depths of 3.7 to 5.5m alongside.

Sibakel Island (6°37'N., 121°45'E.), a small island 37m high, lies 2 miles W of Pangasahan; it is heavily wooded.

The coast of Basilan from Pangasahan Island NNE to Basilan Point, 4 miles distant, is heavily wooded.

12.29 Basilan Point (6°41'N., 121°51'E.)is low and covered by woodland; it is fronted by coral reefs. From Basilan Point to Batupare Point, about 14 miles ENE, the low coast is intersected by small rivers emptying into the sea through shores lined by mangroves.

Lampinigan Island (6°41'N., 121°53'E.), 57m high, lies 1.75 miles ENE of Basilan Point.

There is landing, with a depth of 2.7m, at Lampinigan village, on the S side of the island.

Pamelukan Bank (6°43'N., 121°54'E.), with a depth of 1.2m, lies in the W approach to Malamaui Road, 2 miles NE of Lampinigan Island. The bank is worked by tide rips. Isolated banks, with depths of 6.7m, lie 1.75 miles NW and NNW of Lampinigan Island.

Balatanai Island lies 0.1 mile offshore, 2 miles ESE of Lampinigan Island. San Rafael Bay, with shoal water throughout, lies close ESE of Balatanai Island.

Malamaui Road (6°42'N., 121°56'E.), SW of Malamaui Island and 6 miles ENE of Basilan Point, provides safe anchorage with good holding ground, protected from strong winds.

The shores of Malamaui Road are low and bordered by coral reefs. Abreast the currents there is usually sufficient depth over the reef at HW for boats to enter.

The best anchorage is off San Rafael Bay, E of Balatanai Island. Small craft may anchor close inshore E of the island. There is also good anchorage S of Lampinigan Island.

Caution.—When poor visibility exists on entering Malamaui Road from N, it is advisable to pass about 1 mile W of Pamelukan Bank and steer for Lampinigan Island, before anchoring in the roads.

12.30 Malamaui Island (6°44'N., 121°58'E.) rises to a height of 113m near its center. Panigayan is a settlement located near the SW end of this densely wooded island. Moro Islet lies 0.2 mile off the S end of Malamaui.

A drying reef, marked by tide rips, driftwood, and three pile beacons, lies close SE of Moro Islet; a 3m shoal lies 1.25 miles SW of the islet; and an 0.9m shoal lies 0.2 mile ESE of the drying reef.

There are several beacons on the SW side of Malamaui and two range beacons stand on the S side of the island. Many of these beacons have been reported missing. A lighted concrete tower marks the E extremity of Malamaui Island.

Isabela Channel (6°44'N., 121°59'E.), separating Malamaui Island from the NW side of Basilan Island, has a least width and depth in the fairway, of 0.1 mile and 9.1m. The sides of the channel consist of coral rising vertically and topped by mangroves, so that vessels can approach within a boat's length. The NE entrance is unmarked, fringed by dangers, and used by vessels with local knowledge during the hours of daylight.

The NE current in Isabela Channel has a velocity of 4 to 5 knots and runs much longer than the SW current and has a greater velocity. Strong tide rips are encountered at channel entrances with wind and current in opposition. Tidal currents set across the channel S of Moro Islet and vessels must exercise caution not to be set onto the drying reef SE of the islet.

Pilotage is optional, but recommended for vessels not having local knowledge. A pilot from Isabela boards the vessel, by previous arrangement, about 1 mile W of Moro Islet.

Kalut Island (6°44'N., 121°59'E.) lies in a bight on the E side of Malamaui, just within the NE entrance.

The SW entrance to the channel is marked by Moro Islet and the drying reef SE, which divide the channel into two parts N and S of these dangers. Transit is recommended only during daylight hours with local knowledge. The channels and adjacent dangers are marked by beacons and buoys, but they are often missing.

12.31 Isabela (6°42'N., 121°58'E.) (World Port Index No. 59770), situated on the NW coast of Basilan, is the most important port on the island.

There are numerous rubber and coconut plantations nearby, and lumber is shipped from the port.

There are berths in Isabela up to 106m in length with depths alongside of 8 to 9m. The maximum length that is permitted alongside is 99m with a draft of 6m.

The concrete wharf is being extended and reclamation work is in progress. An ore transit shed is being constructed. The stack of a lumber sawmill is prominent.

There is anchorage, for vessels with local knowledge, in the channel N of Kalut Island, in a depth of 13.7m mud, but the swinging room is limited and larger vessels secure their hawsers to the mangroves.

A preferred anchorage is W of the stack, in depths of 11 to 14.6m, sand and coral. A regular launch service between Zamboanga City and Basilan is maintained.

Isabela can be approached from the NE or W. Because of strong tidal currents and the constricted channel, the NE entrance is used only by coastal vessels with local knowledge.

It is recommended that vessels entering should stem the tide and proceed only during daylight hours.

Approaching Isabela from the W, if passing N of Moro Islet, keep well clear of the NE point of the islet as the current sets onto the reef which extends off the point.

A pair of white, triangular beacons, in range 067°, lead through the channel N of the islet. In transit of the channel leading between Basilan and the drying reef SE of Moro Islet, a course of 081° leads in mid-channel to the piers.

The tidal current sets onto the drying reef which is marked by three beacons near its E end. Buoys, often missing, mark the sides of the N and S channels.

The W entrance is generally used by ocean vessels calling at Isabela. Because of the geographical situation and natural hazards, night entry is reported to be not recommended. Pilotage is available. The pilot station is in Isabela.

12.32 The **Tapiantana Group** (6° 20'N., 122° 00'E.) consists of several inhabited small islands and reefs lying off the W part of the S coast of Basilan Island.

Tapiantana Channel (6° 22'N., 122° 00'E.), which has a least depth of 11.9m, separates the group from Basilan Island. The principal islands of the group are Bubulan Island, Saluping Island, Linawan Island, and Tapiantana Island. Depths of 183m, and over, exist close off the S sides of the group. Depths W of the group are irregular, but no dangers have been found.

In the channels between the islands of the group are irregular in direction. In Tapiantana Channel the currents are strong and set E and W. At times, there are eddies inshore and tide rips on the banks. Heavy rips, which often resemble breakers, occur in the S entrances of the channels between the various islands and in those channels leading to anchorages. In the open water to the W of the island group, the tidal currents set in a NW to SE direction.

Bubuan Island (6° 21'N., 121° 58'E.), 2.5 miles S of the W part of Basilan Island, is the farthest N of the Tapiantana Group. Mount Bulutbulibato, rises to a height of 224m in the NW part of the island. Bubuan, fringed by coral, is densely wooded on its W side and the E and W sides consist of mangrove swamps.

Anchorage can be taken off the SE extremity of Babuan Island, in a depth of 12.2 to 14.6m, sand and coral.

Saluping Island, which is low and flat, lies 2 miles ESE of Buban Island. It lies on an extensive coral reef, that bares, on the NE and S sides. A chain of disconnected islets lie on the outer edge of the reef, and Timbungan, about 1.5 miles in length, is the largest of these islets; it lies on the SE side of the reef.

12.33 **Tapiantana Island** (6° 18'N., 121° 59'E.) is located on the S side of the group, 2.25 miles SW of Saluping Island. Mount Bancaobancao, which is wooded, rises to a height of 249m. The E part of the island is a mangrove swamp; however, a coral reef, which dries, extends 1.5 miles E.

Tolonpisa Island, is a narrow sand and coral spit extending along the S side of the coral reef, and nearly joins the S extremity of Tapiantana Island. Haluluko Island, a small mangrove islet, lies on a drying reef 0.25 mile NE of Tapiantana.

Linawan Island (6° 19'N., 121° 55'E.) lies 1.5 miles WNW of Tapiantana Island. The island has a peak 249m high, in its W part; it is fringed by sandy beaches except on the NW side where rocky ledges extend offshore. The E and S parts of the island are cultivated. A bank with depths of 4.6 to 13.7m extends 1.25 miles SSE from the island; tide rips form over the S part of this bank.

Pababat Shoal (6° 18'N., 121° 52'E.), 3 miles WSW of Linawan Island, is a bank of white coral sand, with a least charted depth of 14.6m.

The Samales Group of islands lie on a bank which extends 25 miles SW from a position 6.25 miles SW of Linawan Island. Fishermen are the primary inhabitants of these sparsely settled islands.

Currents in the channels between the islands are strong, with a velocity of 3 knots observed between the NW end of Tongquil and Mamad Islands. Overfalls and rips occur near shoals and where there are radical depth changes.

Tatalan Island (6° 13'N., 121° 50'E.), the NE island of the Samales Group, is densely wooded and has a prominent summit near its N part; the S part is low and a light is shown from its S extremity.

A spit, with a depth of 8.7m, extends 2 miles SE of the island. Mandi Rock, 1m high and steep-to, lies 2 miles W of the NW side of Tatalan Island. The channel between the rock and the island has depths of 8.7 to 14.5m.

12.34 The **Bolod Islands** (6° 16'N., 121° 36'E.), the farthest NW islands of the Samales Group, lie 13 miles WNW of Tatalan Island; the group consists of two small, densely wooded islands.

East Bolod Island (6° 16'N., 121° 37'E.) has a dome shaped summit which rises to a height of 161m.

A spit, with a depth of 4m, extends 0.3 mile N of the island and Tirana Rock, above-water, lies 0.2 mile farther N. A shoal, with a least depth of 5.5m, extends 1.5 miles SSE of East Bolod Island.

West Bolod Island (6° 15'N., 121° 35'E.), 152m high, lies 1.25 miles SW of East Bolod Island. This island is steep-to except on its S side. The channel between the two islands is deep and clear of dangers.

Sungu Shoal (6° 13'N., 121° 41'E.) has a least depth of 1.8m and is located 4.25 miles SE of East Bolod Island.

Depths of 8.5m and 8.2m lie on the bank 0.5 mile E and 0.75 mile ENE, respectively, from Sungu Shoal.

Sibarut Bank (6° 12'N., 121° 31'E.), with a depth of 12.3m, sand and rock, lies 5 miles SW of West Bolod Island.

Bucutua Island (6° 09'N., 121° 49'E.) is low and rises to a height of 89m on its SE side. The E coast of the island is sandy and clear of dangers, except for a shoal, with a depth of 5.8m, lying 1 mile offshore. Butakalut Shoal, with a depth of 4.9m, lies 0.5 mile W of Bucutua.

The channel between Bucutua and Tatalan Island, 2.75 miles NNE, is deep and clear of dangers in the fairway. It is used by vessels in transit between Iolo and SE Mindanao ports.

Ton Sandungun Channel, narrow and with a least depth of 0.9m at its SW end, separates Bucutua and Bulan Islands. The channel affords shelter for small craft, especially within the NE entrance where anchorage can be taken.

Anchorage can be taken off the NE entrance, in depths of 14 to 18m, loose coral and sand. This anchorage is clear of strong tidal currents and affords fair protection.

12.35 **Bulan Island** (6° 08'N., 121° 50'E.) is densely-wooded, low, and has a conspicuous peak at its center. A black rock stands at the NE end of the island.

The two small Dipolod Islands lie 1.25 miles off the NE side of Bulan Island. The narrow channel between the islands has a depth of 5.5m.

Mamad Island (6° 08'N., 121° 46'E.) lies 1.5 miles W of the SW part of Bucutua Island; it is wooded, with a height of 39m. There is less than 9.1m all around the island.

Tongquil Island (6° 03'N., 121° 51'E.) is low, flat and densely wooded. Sagui Point, the NW extremity of the island, lies 3.5 miles SW of Bulan Island. The NW extremity is low and fringed by a coral reef. The SW side is fronted by a barrier reef with several narrow entrances leading to a shallow lagoon.

The S and SE coasts to **Eguet Point** (6°03'N., 121°57'E.) are steep-to. The N side of the island is fringed by a partly drying coral reef and fronted by shoals with depths less than 5.5m. Gumila Reef, which dries, lies 4.75 miles W of Eguet Point.

Vessels with local knowledge can anchor N and E of Gumila Reef, good holding ground, in depths of 11 to 16.5m, sand and coral.

Caution.—Caution is advised as the S and SE side of this island are steep-to. A vessel has been reported to have run aground about 0.75 mile E of the island's S extremity. The vessel was reported to have a draft of 7.3m.

12.36 Parol Island (6°04'N., 141°43'E.), 2.25 miles W of the W extremity of Tongquil, is low and fringed by coral reefs. Foul ground extends 0.5 mile SE, and 0.6 mile N from the island; an isolated 4.9m patch lies 0.2 mile off its SW side. Mananoc Island, which is also low and fringed by coral reefs, lies 2 miles WNW of Parol Island.

Balanguingui Island, low, uninhabited, and reef-fringed, lies 1.25 miles SW of Parol Island. A low unnamed island, separated by drying reefs, lies NW of Balanguingui.

Bunotpasil Island lies close W of the unnamed island and Dawildawil Island lies 0.5 mile S of Bunotpasil.

Sipac Island, attached to Balanguingui Island by a reef, and Simisa Island, 4 miles SW of Sipac, are low, uninhabited, and reef-fringed and lie on shoals.

Suligan Shoal (6°00'N., 121°38'E.), with a least depth of 5.8m, lies in the channel between Sipac and Samisa Islands.

Bangalao Island (6°01'N., 121°32'E.), lying at the W end of the Samales Group, 2.75 miles NW of Simisa Island, along with Manungut Island, 1 mile farther NW, are both reef-fringed. Both islands are fronted by shoals enclosed by the 10m curve. Manungut Island rises to a height of 80m.

The Jolo Group and the Tapul Group

12.37 The Jolo Group and the Tapul Group lie between the Samales Group and the Tawitawi Group. The Jolo Group consists of the large, important Jolo Island and the smaller adjacent islands. The Tapul Group consists of four rather large islands and numerous smaller islands lying between Jolo Island and Tapaan Passage, about 30 miles SSW.

The islands are rugged and well cultivated. Tapaan Passage separates the Tapul Group from the Tawitawi Group. There are several good anchorages on Jolo Island.

Winds—Weather.—The islands of the Jolo Group and the Tapul Group are seldom, if ever, visited by gales, although strong winds and heavy rains are not uncommon.

The percentages of calms are higher than anywhere else in the Sulu Archipelago. At Jolo, NW winds are more frequent than E winds.

Thirty consecutive rainless days have been experienced at Jolo during January and February. Monthly rainfall amounts in excess of 444mm have been reported at Jolo in January, February, June, and November. At Jolo nearly 263mm of rain has fallen during a 24 hour period in June.

Tides—Currents.—The tides on the N coast of Jolo Island are chiefly diurnal, whereas on the S coast they are semidiurnal. The tidal range is from 0.6 to 1.5m.

Strong tidal currents are found in the various channels leading between the islands of the Jolo Group and the Tapul Group. They set in a general W and NW direction on the rising tide and in opposite directions on the falling tide.

Off the N coast of Jolo Island the tidal currents set W on the rising tide and E on the falling tide, at a rate of about 2 knots.

In the vicinity of Jolo the direction is somewhat modified by the contour of the land, the current setting SW and NE.

Strong tidal currents are found in the channels between the islands lying off the NE and NW coasts of Jolo Island. Strong rips are found in this area.

The edge of the bank on which the Sulu Archipelago lies comes close to the SE sides of the Jolo Group and the Tapul Group. Strong rips are usually found in areas where there are abrupt changes in depths.

The tidal currents follow the coasts of the various islands and are strong, up to 6 knots being experienced in the narrower channels. The currents set in a general W and NW direction on the rising tide and in an opposite direction on the falling tide.

The tidal currents attain a rate of 2.5 knots between Pafa Island and Taluc Island, setting NW on the rising tide and SE on the falling tide. Between the former island and Dongdong Island the currents set in similar directions and attain a rate of 3 knots.

Tidal currents are strong and irregular off Maimbung Bay. They set W on the rising tide and E on the falling tide, the change occurring from 30 minutes to 2 hours after time of HW and LW.

The tidal currents are strong in the channel between the SW coast of Jolo Island and Sulade Island, a maximum rate of 5 knots being experienced. The strength at flood occurs about 2 hours 30 minutes after LW at Cebu, and the strength at ebb occurs about 1 hours 30 minutes after HW at that port. Slack water precedes the times of H and LW at Cebu by about 45 minutes.

The currents set NW on the rising tide and SE on the falling tide.

The tidal currents are very strong in the narrow channels separating the various islands of the Tapul Group and strong rips are found in their vicinity.

12.38 Bitinan Island (6°04'N., 121°27'E.) rises to a height of 215m in its S part. Bitinan Island is the farthest NE of the Jolo Group, and is located 3.25 miles WNW of Manungut Island of the Samales Group.

Capual Island (6°02'N., 121°24'E.), about 1 mile SW of Bitinan Island, 297m high at the SE extremity, is separated from the N side of Jolo Island by Capual Channel. The N and W parts of the island are low and wooded; the coast is mostly fringed by a sandy beach interspersed with coral ledges.

A ledge, with a depth of 3m at its outer end, extends 0.4 mile N from the NW point of the island.

A reef extends about 0.2 mile W from the W extremity of Capual Island.

Goitya Shoal (6°03'N., 121°22'E.), with a least charted depth of 2.7m, lies about 1 mile offshore, N of the W extremity of Capual.

Capual Channel (6°01'N., 121°24'E.), with a least width of 0.25 mile, is deep at the E end, but in the narrow part there are depths of 2.1m. Isolated depths of 1.2m lie 0.15 mile and 0.5

mile NE of the E extremity of Bulicutin Island. Tidal currents are strong.

Anchorage can be taken anywhere in the channel, but the preferred anchorage is N of the village Liangliang, in a depth of 14.6m, sand.

Jolo Island, the largest of the Jolo Group, is composed of a series of hills and valleys.

The highest peak is **Mount Tumatangas** (6° 00'N., 120° 58'E.), 812m high, located 6 miles NE of the W extremity of the island. The coasts are mostly wooded, and clear of dangers.

The SE coast is especially steep-to with the 200m curve within 0.3 mile in places; the off-lying islands are also steep-to. Tide rips are usually found in the vicinity of abrupt depth changes.

Anchorage can be taken in several bays that are along the coast.

12.39 Tandu Peak (5° 58'N., 121° 24'E.), a grassy hill 400m high, is located about 1.25 miles inland from the E extremity of the island. Tandu Panuan, a village, stands on the coast 1.75 miles S of Tandu Peak.

A bay, which recedes about 1 mile, is formed between a point close E of Tandu Panuan and Tandican Point, 3 miles SSW. The entire bay dries, and to a distance of 1.5 miles offshore.

Tandican Point (5° 54'N., 121° 23'E.), the SE extremity of Jolo Island, is low, fringed with mangroves, and backed by high hills. The coast SW of the point, as far as **Karangdato Point** (5° 52'N., 121° 17'E.), is indented by **Pitogo Bay** (5° 54'N., 121° 20'E.), deep and open to the S.

There is a landing in a break in the fringing reef 2.5 miles NE of Karangdato Point.

Tutu Bay (5° 55'N., 121° 12'E.), entered between Karangdato Point and Putic Point, 13 miles W, is separated from a bay on the N side of Jolo Island by a low isthmus, 2.5 miles wide. Tutu Point is located 4.5 miles NW of Karangdato Point.

The head of the bay is encumbered with shoals, and reefs which dry, from Tutu Point to **Mabajoc Point** (5° 55'N., 121° 08'E.), 5.5 miles W.

Several settlements and villages are located on the shores of Tutu Bay, which is protected by Pata Island.

Serantes Shoal (5° 54'N., 121° 07'E.), with a least depth of 2.7m, lies 0.5 mile offshore, 3 miles ENE of Putic Point. Anchorage can be taken in the outer part of Tutu Bay, in depths of 18.3m, sand and coral.

12.40 Pata Island (5° 49'N., 121° 10'E.), fronting Tutu Bay, is 422m high. The coasts are fringed by a coral reef which on the E side extends about 2 miles and encircles Kamawi Island.

Dongdong Island lies on a bank 1.25 miles NE of Pata Island, and Tambulian Island lies on the same bank 0.75 mile NW of Dongdong Island.

These islands are fringed by partly drying reefs, and are separated from each other and Pata Island by navigable channels. The navigable channel between Tambulian Island and Dongdong Island is 0.3 mile wide, with a least depth of 5.9m.

Damocan Island (5° 51'N., 121° 08'E.), 41m high, lies about 0.5 mile W of the N part of Pata Island; they are separated by a deep channel. Lumbian Island lies 1.25 miles W of Damocan Island.

Garcia Shoal (5° 50'N., 121° 06'E.), with a depth of 6.4m, lies 0.25 mile SW of Lumbian Island.

Patian Island (5° 51'N., 121° 05'E.), 154m high, lies 0.5 mile NW of Lumbian Island.

Teombal Island (5° 50'N., 121° 02'E.), 2.75 miles W of Patian Island, low and fringed by a coral reef, is the farthest W of these offshore islands. A bank, with depths of 7 to 9m, extends 2.25 miles SE from the island.

Villamil Rock (5° 52'N., 121° 04'E.), steep-to with a depth of 0.9m, lies in mid-channel 0.75 mile NNW of Patian Island.

Maimbung Bay, entered between **Putic Point** (5° 53'N., 121° 05'E.) and Cabalian Point, 8 miles W, affords good shelter during the Northeast Monsoon, but is exposed to heavy squalls and swells during the Southwest Monsoon.

The E side of the bay is covered by mangroves, and the W side is wooded with cleared spaces.

Mount Matatal (5° 57'N., 121° 01'E.), 140m high, is located about 1.5 miles N of the head of the bay.

12.41 Maimbung (5° 56'N., 121° 02'E.), a town, stands on piles at the head of the bay, on the outer edge of the bar at the mouth of the Maimbung River. The bar has a depth of 0.3m.

A building with a dome stands on the point S of Maimbung town.

Dry Bank (5° 55'N., 121° 01'E.), which dries, lies about 1 mile S of Maimbung; a smaller reef which dries, lies 0.3 mile NNE of Dry Bank.

Marban Bank, with a least charted depth of 0.9m, lies 0.5 mile SE of Dry Bank. Other shoal depths in this area may be seen on the chart.

Batolaqui Bank (5° 53'N., 120° 57'E.) is composed of many shoal patches lying 1.25 miles E and SE of Cabalain Point. There are depths of 3.4 to 9.1m on the bank, with a drying rock on the W edge.

A narrow channel, with a depth of 11m in the fairway, leads between the bank and Cabalain Point. Bunga Point bearing 309°, open SW of Tubingantan Point, leads SW of Batolaqui Bank.

Tidal currents within the bay are weak, but off the entrance they are strong, irregular, and set E to W.

Anchorage can be taken anywhere in the bay. The usual anchorage is 0.5 mile S of the town, in depths of 15 to 17m, coral sand, with the middle of Dry Bank bearing 232°.

Smaller vessels can anchor close inshore, directly off the mouth of the river, in a depth of 13m, mud and sand.

Directions.—Two channels lead to the anchorages. The E and best channel leads between Marban Bank and the E shore of the bay, in a least depth of 9m.

When approaching from SE, after passing Patian Island, steer for Mount Matatal (1.5 miles NNW of town), bearing 340°, which will lead to the anchorage. The W channel between Marban and Dry Banks should only be used with local knowledge.

12.42 Cabalian Point (5° 53'N., 120° 56'E.) is low, but the terrain rises quickly to Mount Tukay, 620m high, 2.75 miles NNE. The coast between Cabalian Point and Bunga Point, 4 miles NW, is low.

Parang (5°55'N., 120°54'E.), 2.5 miles NW of Cabalian Point, is the commercial center for the entire area. The town is built on piles over the water. There is an L-shaped concrete pier which extends 38m WSW and then 75m NW.

A rock causeway leads to the pier. Pile clusters stand at intervals along the inner leg and about 0.3 of the way to the pierhead. There were reported depths of 9.8 to 11.3m on the S side of the outer leg, and 4.3 to 5.8m on the N side.

There were reported depths of 6.1 to 9.6m about 6m off the pilings on the S side of the inner leg; 1.2 to 3m about 7.9m off the N side pilings.

Anchorage can be taken about 0.3 mile off Parang, with the galvanized iron roof of a store in town bearing 010°, and **Tubingantan Point** (5°54'N., 120°55'E.) bearing 130°, in a depth of 16m, sand and coral. This anchorage is exposed to the Southwest Monsoon.

Parang Island lies on a bank, close offshore, about 1 mile NW of Parang.

12.43 Sulade Island (5°50'N., 120°47'E.), 7 miles SW of Bunga Point, consists of coral and sand, surrounding a shallow lagoon; boats can pass the entrance on the S side at HW. The island is swampy and 12.2m high to the tops of the trees.

Tidal currents between Sulade Island and Jolo Island set NW and SE, and attain a rate of 5 knots.

There is anchorage over the bank extending from the W side of the island, in depths from 11 to 16.5m, coral and sand. There is some protection from the Northeast Monsoon but it is exposed to the Southwest Monsoon.

Bunga Point (5°55'N., 120°53'E.), the SW extremity of Jolo Island, is fringed by a coral reef. An isolated 5.5m patch lies 0.5 mile W of the point; the 20m curve lies about 0.5 mile farther W.

The coast between Bunga Point and Silangon Point, 2 miles NNW, is low, fringed by a coral reef and backed by coconut trees.

From **Silangon Point** (5°57'N., 120°52'E.), the W end of Jolo Island, the coast trends about 3.5 miles NNE to Pulaluaac Point, then 3 miles NE to Candea Point.

This part of the coast is backed by the slopes of **Mount Tumatangas** (6°00'N., 120°58'E.) which rises to a height of 812m. The coast between Candea Point and Daingapac Point, 5.25 miles NE, is steep-to, fringed with coral and backed by mountains in the interior.

Matos Shoal (5°59'N., 120°53'E.), with a depth of 7.3m, lies 1.5 miles N of Silangon Point.

Tulian Island (6°01'N., 120°53'E.), 35m high, lies 1.25 miles offshore NW of Pulaluaac Point. Busson Rock, awash, lies 0.25 mile NW of Tulian Island, about 0.1 mile inside the 200m curve.

Numerous islands and shoals lie in the NW approach to Jolo.

Minis Island (6°12'N., 121°03'E.) is the farthest NE; it is small, wooded, and steep-to. Pantocunan Island, small, wooded, and reef-fringed, lies 10.5 miles W of Minis Island; it is the farthest NW of these islands. Heavy tide rips exist near Pantocunan as the outer reef edge is steep-to.

12.44 Bubuan Island (6°11'N., 120°58'E.), 3 miles WSW of Minis Island, is low, but a peak in its N extremity rises to a height of 89m. A bank, with a depth of 8.2m, extends about 1 mile NW from the island. Cabucan Island, the largest in the group, lies 1.5 miles SW of Bubuan Island.

This island is reported to be low, swampy, and uninhabited. A small wooded island lies on a reef, close off the NE side of Cabucan.

The channel between the islands is fouled by a reef with a least depth of 3.7m.

Hegad Island lies in this group, 0.75 mile SE of Bubuan, and Tauitaui Island, quite small, lies close W of Hegad.

Aguirre Bank (6°07'N., 120°51'E.), with a depth of 7.6m, is steep-to; it lies 2.25 miles WSW of Cabucan Island.

Pangasinan Island (6°08'N., 120°59'E.), with a hill 123m high in the S part, has steep-to sides with S and W coasts fringed with sand. A 6.4m shoal lies 0.75 mile NE of the island.

Marungas Island, 0.4 mile SW of Pangasinan Island, is low but has a hill 64m high in its W extremity. Strong, irregular currents flow through the channel between this island and Pangasinan.

Anchorage can be taken in this channel about 0.1 mile off either coast, in depths of 11 to 22m, but the tidal currents are strong.

Jolo (6°03'N., 121°00'E.)

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12.45 Jolo is the capital of Sulu Province, which comprises the whole of the Sulu Archipelago. The town, a walled city, is partially built on a long pier situated W of the town. The port is administered by the Philippine Ports Authority, Jolo, Sulu, Philippines.

Winds—Weather.—Local weather conditions are generally good, with the incidence of typhoons very infrequent. The strongest winds occur in October and early November during the Southwest Monsoon.

These winds last for 2 or 3 days and cause a heavy beam swell at the pier. Storm warning signals are displayed at the weather station.

Tides—Currents.—The tides are chiefly diurnal, range about 0.8m. Tidal currents off the town set NE and SW. The strength of the current sets W and E about 2 hours after LW and 2 hours after HW at Cebu. Slack water occurs about 1 hour before HW and LW at Cebu. Currents in the harbor area and off the pier have a velocity of 1 to 2 knots and at times run counter to the normal offshore currents.

Depths—Limitations.—The approach to the anchorage and pier is clear and free from hazard, except the shoal at the NE end of the pier. The Government U-shaped pier is about 88m long at the face, with controlling depths of 7.6 at the NE end, 7.9m at the middle, and 9.1m at the SE end.

Berthing space at the main wharf is reserved for large foreign vessels and domestic vessels.

Maximum permissible draft at MLLW is 4m with a loa of 60m. At Caltex, Mobil and Petron Oil Depot, there is no limit on loa, draft 6m.

It was reported that a vessel with a draft of 4m and a length of 60m could be accepted at the main wharf.

The basin, enclosed by the three arms of the U-pier, has landings on the NE and NW sides. There is a depth of 2m in

the entrance. A private jetty has been constructed close NE of the main wharf and is able to accept vessels with a maximum draft of 6m. There is an associated oil depot close NE of the town.

Aspect.—Mount Tumatangas, 4 miles SW of town, is prominent. A dome standing 0.1 mile SE of Jolo Light, and another dome of a concrete mosque which stands 0.3 mile SSW of the mole are both conspicuous. There is a high, white cross 0.2 mile ENE of the mosque dome. A water tower and a radio mast, both showing lights, stand 0.2 mile ESE of the lighthouse and 0.75 mile S of the mole.

Pilotage.—Pilotage is compulsory. Pilots request a 3 day advance notice of ETA and board vessels at the quarantine anchorage. A customs launch assists in docking and undocking provided sufficient notice is given. Towage is available. Pilots are stationed at nearby Zamboanga City.

Anchorage.—The anchorage lying NE of Belan Point and NW of the pier is open to the N and W, and as the coastal bank is steep and tidal currents are strong, it is not considered a safe anchorage. During the Northeast Monsoon, it may be necessary to take shelter under the lee of Marungas Island. Depths of 22 to 26m are found in the anchorage area.

Merchant and naval vessels must anchor W and E of a line drawn in a 351° direction from Jolo Light. All foreign vessels entering port should anchor 4 miles NW of the pier and await the boarding officials. Entry is permitted only between sunrise and sunset. Quarantine inspection is usually held alongside the pier.

Anchorage is available W of the Caltex Depot. Large vessels can obtain anchorage in approximate position 6°04.8'N, 121°00.4'E, located close SW of Daingapic Point.

Directions.—When about 0.5 mile from Jolo Light, change course to the SW for the anchorage or for the approach to Jolo Pier. The approach channel to the pier is about 0.2 mile wide between the shoals on either side. The pier should be approached from the W, as there is shoal water off its NE end.

12.46 Daingapic Point (6°05'N., 121°01'E.) lies 2 miles NNE of Jolo. Pandanan Point is located 6.5 miles E of Daingapic Point; from this point the coast trends 2 miles SE to Igasan Point. This entire coastal area is fringed with coral and is steep-to. There are several mountain peaks rising to heights of 789m within 3 miles of the coast.

From Igasan Point to **Baverstock Point** (6°01'N., 121°18'E.), the coast is indented by an open bay, with sand and coral beaches backed by high hills. Caduayan, a village, is located at the head of the bay.

The 40m line lies 2.25 miles N of Caduayan, but is 0.5 mile offshore close E. Eseo Bank, with a least charted depth of 4.6m, lies 1.25 miles N of the village.

Bancungan Island (6°05'N., 121°00'E.), 0.5 mile E of Igasan Point, is partly wooded; it rises to a height of 155m. The channel between the island and Jolo Island has depths of 29 to 33m.

The island is steep-to except off its NW side where an above-water rock lies at the outer end of a spit. Panganaa Island, steep and rocky, lies 1 mile ESE of Bancungan Island.

Gujangan Island (6°05'N., 121°16'E.), 5 miles E of Bancungan Island, has two wooded hills, 122m and 81m high, with a narrow strip of low land between them.

The island is steep-to, except on its E side where an extensive drying reef fronts a lagoon.

12.47 Dalrymple Harbor (6°00'N., 121°19'E.), indenting the N coast of Jolo Island, close W of Baverstock Point, is closely fronted by Tulayan Island. Tulayan has a cone-shaped peak 160m high, which is a good landmark from the N and E. Several shoals lying between Tulayan Island and the S shore have depths of 3.4 to 5.5m.

White Passage, the W entrance to Dalrymple Harbor, is formed between Baverstock Point and Tulayan Island. It is contracted by a bank extending N from the point and other shoal patches.

Tandu Bato (6°00'N., 121°18'E.), a village 0.3 mile SSE of Baverstock Point, is connected with Jolo by a good road. There is a stone mole off the village, but the ruins of a pier obstruct the use of the mole.

Anchorage can be taken SE of Tulayan Island, in depths of 14.6 to 16.5m, sand, but it is exposed to the NE. During strong NE winds, better protection is afforded under the lee of the island.

To approach the anchorage, pass about 0.5 mile E of Tulayan, avoiding the 5.5m patch lying SE of **Martin Bluff** (6°02'N., 121°20'E.) and the 4.6m patch lying 0.75 mile farther E.

When the S extremity of the island bears 270°, steer for it on that bearing and anchor when Martin Bluff bears between 000° and 030°. If entering from the W by White Passage, keep 0.25 mile off the W and S sides of Tulayan Island, then steer for anchorage as above.

Petley Point (6°01'N., 121°21'E.), about 2 miles E of Baverstock Point, is fronted by a drying reef. Patotol Bay is entered about 1.25 ESE of Petley Point.

Patotol Bay (6°00'N., 121°22'E.) has a narrow tortuous entrance between reefs on either side.

Anchorage, in depths of 9.1 to 11m can be taken within the bay entrance. There are depths 5.5m about 0.4 mile within the entrance.

Bulicutin Island (6°01'N., 121°22'E.), low and swampy, fronts the entrance to Patotol Bay. A draft of 3.7m can be carried through the channel W of Bulicutin.

The E channel is deeper but is encumbered with rocks and shoals. Tidal currents average about 2.5 knots in the channels.

Liangliand (6°01'N., 121°23'E.) is located on Jolo, 0.6 mile E of the E extremity of Bulicutin Island. The shore from the E entrance of Patotol Bay to the village of Liangliang is fronted by reefs; the reefs close W of the village dry at LW. Liangliang lies at the W end of Capual Channel.

12.48 The Tapul Islands are a group of four large islands and several smaller islands, lying to the SSW of Jolo Island are rugged, fertile, and well cultivated.

Taluc Island (5°44'N., 121°00'E.) and Cabingaan Island, the farthest NE of the islands lying on the same drying reef, lie 9.5 miles SSW of Jolo Island. Cabingaan is covered mangroves. Sibabag, a Moro settlement built on piles, lies midway between the two islands.

A boat passage leads to Sibabag from the E side of the reef. Paquia Island, fringed by a reef, is separated from the W side of Cabingaan by a deep passage 0.25 mile wide. A spit, with a

depth of 3m at its outer end, extends 1.25 miles SSE from Paquia Island.

Tapul Island (5°44'N., 120°54'E.), about 3.5 miles W of Taluc Island, is circular in shape and presents a rugged appearance.

It rises to **Mount Dakut** (5°44'N., 120°54'E.), a grassy summit 483m high near the center. Coral reefs fringe the S end of Tapul, and there are numerous coastal settlements on the island.

12.49 Lugus Island (5°41'N., 121°51'E.), SW of Tapul Island, is rugged, mountainous, and wooded. Mount Biubugnan rises to a height of 294m at the W side of the island. An extensive drying reef extends 1.75 miles E of the E end of the island. Strong tidal currents set through the narrow channel between Lugus and Tapul Islands; there is a least depth of 5.8m in the fairway.

Lugus Shoal (5°38'N., 120°46'E.), with a charted depth of 4m, lies about 2 miles SW of Lugus Island.

Siasi Island (5°32'N., 120°52'E.) lies 4.25 miles S of Lugus Island. Gorro of Siasi, 495m high near the center, is the highest point on the island. It has a prominent clump of dark trees on its summit.

There are several fishing villages within the reefs that fringe the E and SW coasts of the island. A village situated at the W end of the island has a pier, with an along side depth of 6.4m.

Tara Island (5°36'N., 120°52'E.), 34m at its E end, is separated from the N side of Siasi Island by a channel 0.25 mile wide, with a least depth of 14.6m in the fairway, but there is a depth of 7.3m in the E approach.

A lagoon lies on the N side of the island, with depths of from 16m to 31m; the lagoon is protected from the N by foul ground. Tincalan Island, 1m high, lies on the foul ground; when seen from a distance it resembles a canoe under sail.

Taratara Island, 38m high, lies close off the NE side of Tara Island. A depth of 5.5m can be carried into the lagoon on either side of Taratara, but the channels are narrow and tortuous, and only suitable for launches.

Laminusa Island (5°33'N., 120°55'E.), lying off the E point of Siasi Island, is low and has a village at its NW point. North Gusun Reef, partly drying, and Gusun Reef, drying, lie off the N and SW sides of Laminusa Island, respectively. Other dangerous reefs lie close N and 2 miles NW of North Gusun Reef.

Anchorage between Laminusa Island and the reefs extending off the E end of Siasi Island has depths of 11 to 16m, sand, sheltered with good holding ground. The reef on the SW side of the anchorage partly dries and is steep-to, but is not easily distinguished.

Tidal currents at springs are strong and set W and then N along the coast of Siasi.

Sumbasumba Island (5°30'N., 120°58'E.), 3.25 miles SSE of Laminusa Island, is the farthest SE of a group of low, thickly wooded islands which extends 4 miles SE from the E extremity of Siasi Island.

A dangerous steep-to reef extends E from Basbas Point, the S extremity of Siasi, to Sumbasumba and then 2.5 miles N. In places the 200m curve lies about 0.1 mile off the dangerous reef. A reef which dries 0.3 to 0.6m, extends 3.25 miles SW from Basbas Point.

Manubul Island (5°28'N., 120°48'E.) is located on a reef formed of grass, sand and coral, 3.5 miles WSW of Basbas Point. A channel, with a depth of 9m, leads between Manubul and the reef extending SW from Basbas Point. Small vessels, with local knowledge, can transit this channel which is about 0.1 mile wide. The tidal currents set through the channel at a maximum velocity of 5 knots.

12.50 Siasi (5°33'N., 120°49'E.) (World Port Index No. 59820) is situated on the W extremity of Siasi Island; it is approached from the N and S through a narrow channel.

A concrete pier exists here, with a depth of 6.4m alongside. A light is shown from the root of the pier.

Sungu Shoal (5°37'N., 120°49'E.), with a depth of 5m, and Langon Shoal, with a least depth of 11m, lie in the N approach to Siasi in positions 2 miles NW and 3.75 miles WNW; respectively, from Siasi Island.

The N approach to Siasi is formed between Siasi Island and Lapac Island. A mid-channel course is recommended to the anchorage, which is in mid-channel SW of Siasi Pier, in depths of 11 to 15m.

There is a maximum current through the channel of 5 knots.

Lapac Island (5°32'N., 120°47'E.), separated from Siasi Island by a channel about 0.3 mile wide, has two prominent peaks, with a deep, cultivated valley between them, so that from NW it appears as two islands.

Several villages are located on the W coast of the island.

Luagat Point (5°34'N., 120°48'E.), the N extremity, is rocky and steep-to; Busluc Point, 0.5 mile W of Luagat Point, is formed of large conspicuous rocks.

Sirun Island (5°35'N., 120°44'E.), a small island 30m high, lies 4 miles WNW of Luagat Point. The island is fringed by a reef which extends 0.2 mile from its W side.

Pandami Island (5°33'N., 120°45'E.), low, sandy, and covered with coconut trees, lies close off the NW side of Lapac Island; the channel between the islands is foul at its N end.

Anchorage for vessels with local knowledge can be taken SW of the island, in depths of 13 to 22m, sand and coral.

Tapaan Island (5°28'N., 120°44'E.), the farthest SW of the Tapul Group, is separated from Lapac Island by a deep channel about 2 miles wide.

The channel is free of dangers except for a rocky patch with a depth of about 8.8m reported to be 1 mile NNE of Tapaan Island.

Tapaan is a low island, with a shallow lagoon on the W side, protected by a barrier reef. Banks extend from the N, E, and S sides of the island.

12.51 The Tawitawi Group of islands extends from Bubuan and Maniacolat Islands, SW for 58 miles to **Bongao Island** (5°01'N., 119°45'E.).

The group consists of more than 30 islands, as well as numerous small islets, boulders, and rock and reef formations above and below-water. Most of the islands are densely wooded and mountainous; some islands consist mainly of mangrove swamps.

Tapaan Passage (5°30'N., 120°40'E.), which separates the Tapul Group from the Tawitawi Group, is 7.5 miles wide between Bubuan Island on the W and Tapaan Island on the E, with depths over 18.3m in the fairway. There are two shoals of

7.5 to 9.1m in the fairway, but there are clear passages on either side of them.

Tapaan Shoal (5° 26'N., 120° 40'E.), with a least depth of 8.5m, and Crest of Wave Shoal, with a depth of 7.3m, are two dangers lying in Tapaan Passage.

Discolored water and tide rips are reported to usually mark **Crest of Wave Shoal** (5° 33'N., 120° 37'E.).

Tides—Currents.—Currents set NW on the rising tide and SE on the falling tide with velocities of 3 to 7 knots.

Heavy tide rips occur at the channel entrances during rough weather. Tapaan Passage is convenient for sailing vessels, and in light winds anchorage can be taken while awaiting the change of tide.

12.52 Parangan Islands (5° 30'N., 120° 34'E.), 10.5 miles W of Lapac Island, are the farthest NE of the Tawitawi Group. They consist of two islets;the easternmost is 27m high, conical in shape, and covered with grass. The W islet is flat; a reef extends E, leaving a narrow passage between the islets.

Maniacolat Island (5° 27'N., 120° 35'E.), densely wooded, has a prominent peak, 227m high, at its N end which appears conical except when seen from the E or W.

A village stands on the E shore, where a prominent spire is located. The shores, except for the S, are steep-to.

Maglumba Islet, 10.1m high, lies 1.25 miles E of the N extremity of Maniacolat Island; foul ground extends 0.2 mile S from the islet.

Bubuan Island (5° 25'N., 120° 35'E.), 137m high on its W side, is separated from Maniacolat Island by a channel 0.5 mile wide, with a depth of 6.4m in the fairway. A steep, rocky cliff stands at the E point of the island. A shallow lagoon fills the center of the island, and is entered N of the hill on the W side.

Sugbai Passage (5° 25'N., 120° 30'E.), formed between Bubuan Island and Sugbai, has a rocky, steep-to 10.4m patch lying midway between the two islands. Two extensive shoals, with depths of 10.9 to 16.5m, lie in the N part of the passage.

Cacatan Island (5° 30'N., 120° 27'E.), 23m high, lies 7 miles NW of Maniacolat Island. Shoal ground, with a least depth of 8.5m, extends 2.5 mile SSE from the island.

Mid-channel Bank (5° 27'N., 120° 32'E.), with least depths of 1.8 to 6.7m, sand and coral, is an extensive bank lying between Maniacolat and Cacatan Islands. A rock, awash, lies on the bank about 2.5 miles SW of the Paragan Islands.

The shallowest parts of the bank are difficult to distinguish.

Sugbai Island (5° 24'N., 120° 23'E.), 235m high, has a summit consisting of twin peaks that appear as one when seen from E or W. There are rocky cliffs on the N side and E end. A lagoon, with no entrance, is located on the S side of the island. A shoal patch, with a depth of 4.6m, lies about 1 mile SE of the W extremity of the island.

Anchorage, with local knowledge, can be taken NE of the shoal patch, in a depth of 13.1m, sand and coral.

12.53 Magpeos Island (5° 20'N., 120° 35'E.), on the S side of Sugbai Passage, 11.5 miles SE of Sugbai Island, is steep, rocky and densely wooded. The island rises to a sharp cone 109m high. Some above and below-water rocks are located on a reef which extends about 0.1 mile E from the island. Twin pinnacle rocks lie close W of the SW end of Magpeos.

Tagao Island (5° 18'N., 120° 34'E.), 76m high, 1.5 miles SSW of Magpeos Island, is wooded, with shoal ground extending 0.75 mile ESE. The shores are fringed with coral and are steep-to on the W and N sides. The channel between Tagao and Magpeos is deep and clear of dangers.

Kinapusian Islands, lying on the S side of the E approach to Sugbai Passage, 4.5 miles S of Tagao Island, consist of three principal inhabited islands that are low, densely wooded, and fringed by above and below-water reefs.

Bintoulan Island (5° 14'N., 120° 38'E.) and Kinapusan Island, 0.6 mile SE, lie on the same partly drying reef; many islets lie on the reef.

Tabawan Island (5° 13'N., 120° 35'E.), separated from Bintoulan Island by a channel about 1 mile wide with a depth of 5.5m in the fairway, lies on the N side of a partly drying reef. Nusa Islands, a group of islets, lie at the S edge of the reef. Other islands lie close W and S of Tabawan. The village of Guitong is situated on the N shore of Tabawan Island.

Tidal currents in the passage W of Kinapusan Island flow parallel with the axis of the channel, but N of the passages the currents set W with the N rising tide. In the area between Kinapusan Island and Tagao Island the tidal currents set WNW to ESE on the rising and falling tides.

Anchorage can be taken N of Tabawan Island, in a depth of 24m, with the W extremity of Guitong bearing 160°, 0.75 mile distant.

Loran Island (5° 12'N., 120° 31'E.), 45m high at its steep-to N extremity, lies 3 miles WSW of Tabawan Island. The channel between these islands has a least depth of 11.3m in the fairway, but a depth of 18.3m can be carried by keeping to the W side.

The edges of the reefs on either side are visible at various stages of the tide. This is the preferred channel leading through this chain of islands.

Manote Island lies on the reef extending 0.6 mile S of Loran Island.

South Ubian Island (5° 11'N., 120° 30'E.) lies on a drying reef 0.75 mile SW of Loran Island. There is a least depth of 5m in the channel between the islands. An isolated patch, with a depth of 4.9m, lies about 1 mile SE of South Ubian Island.

Several islets, up to 2m high, are located on the drying reef SE of South Ubian Island.

Bacutcut Bank (5° 11'N., 120° 25'E.) is an extensive drying reef separated from the reef on the W side of South Ubian Island by a passage with a least depth of 7.9m. The reefs on each side of the passage are usually visible. There are clusters of above-water rocks and islets lying in the middle, N, S, and E sides of Bacutcut Bank.

Tabuan Island (5° 09'N., 120° 27'E.), inhabited, is the largest of the Tabuan Islands, a group of rocks and islets lying near the SE end of Bacutcut Bank.

Tacutboata Reef (5° 09'N., 120° 24'E.), which dries 0.6m, lies 0.75 mile SW of Bacutcut Bank and 2.25 miles W of Tabuan Island.

12.54 Kang Tipayan Dakula Island (5° 27'N., 120° 14'E.) and Kang Tipayan Diki Island, lie 8 miles and 11 miles WNW, respectively, from Sugbai Island and about 5.5 miles N of Tawitawi Island. The islands are of coral formation and

covered with trees 12 to 30m high, and lie on an extensive bank.

Shallow salt water lagoons encumbered with reefs and mangroves lie in the interior of the islands. Drying barrier reefs block the entrance to the lagoons.

A coral reef fronts Kang Tipayan Diki Island on the NE side; a stretch of sand beach lies on the S side. Kang Tipayan Dakula Island is fronted on all sides by a coral reef. A 0.3m coral shoal lies midway between the two islands, with a deep channel on either side of the shoal.

Tumbagaan Island (5° 23'N., 120° 19'E.), 186m high, is hilly and wooded; a prominent hill stands on the E end.

There are rocky cliffs on the W, N, and E ends of the island, and above-water rocks lie 0.5 mile S and SE of the S extremity. Strong tidal currents and tide rips occur in heavy weather, in the passage between Tumbagaan and Sugbai Islands.

Pandanan Island (5° 19'N., 120° 25'E.) and Tancolaluan Island are small coral islets lying on detached banks, 6.5 and 9.75 miles SE, respectively, from Tumbagaan Island.

Twin rocks, above-water, lie 0.2 mile W of Tancolaluan Island.

12.55 Calupag Island (5° 16'N., 120° 23'E.), 3 miles SW of Pandanan Island, is 84m high; it is the only island in the area not densely wooded. An islet, 6m high, lies 0.3 mile N of the island and a 1.8m patch lies 0.4 mile farther N.

Tandungan Island (5° 15'N., 120° 21'E.), 0.5 mile SW of Calupag Island, rises to a peak 151m high near its center. Pasegan Samal Island lies 2.5 miles SE of Tandungan Island, close N of Bacutcut Bank, and Pasegan Guimba Island lies 1 mile ESE of the same island.

Dundangan Island (5° 13'N., 120° 21'E.), close S of Tandungan Island, rises to a height of 116m about 0.6 mile S of its N extremity. Several small islets lie on the reef which encircles the island; their positions may be seen on the chart. An extensive reef, which dries, extends about 2.2 miles E from the S extremity of Dundangan.

This reef is separated from Bacutcut Bank by a deep channel 0.3 mile wide between the 9.1m lines. A tidal current, with a velocity of 6 knots, flows through this channel.

Tandubas Island (5° 08'N., 120° 20'E.) lies 1.5 miles S of Dundangan Island.

The island is low, with a dense jungle in the N part and cultivated land in the S part. The island is surrounded by a reef which dries in several areas.

Tandungan Channel (5° 14'N., 120° 20'E.), between Calupag, Tandungan, and Dundangan Islands on the E, and Tandubatu Island on the W, has a least width of 0.3 mile.

Vessels, with local knowledge and a maximum draft of 5.8m, can use this passage, but there are numerous reefs on either side.

The passage is sheltered from heavy seas during the Southwest Monsoon, and anchorage can be taken anywhere. Currents in the channel are strong.

12.56 Tandubato Island (5° 13'N., 120° 17'E.) is separated from the E side of Tawitawi Island by Gallo Malo Channel, a foul and constricted channel. The E part of the island is high, rising to a height of 149m in the NE part.

The island is fringed by mangroves and coral reefs; a number of small islets are located on the reefs.

Situgal Hea Island is separated from the NE side of Tandubatu Island by a foul channel, 2.4m deep.

Basbas Island (5° 21'N., 120° 14'E.), separated from the NE extremity of Tawitawi Island by Basbas Channel, lies 4.25 miles NNW of Tandubatu Island. A hill, 70m high, is located in the central part of the W side of the island.

Tabolongan Island, 49m high, lies 0.5 mile SW off Basbas and close off Tawitawi Island. Pahumaan Island, low and wooded, lies 1.25 miles E of Basbas.

Anchorage can be taken in the fairway of Basbas Channel, about 0.5 mile N of Tabologan Island, in a depth of 14.6m, sand and coral.

There are several islands located on foul ground, between Basbas Island and Tandungan Island, 7.5 miles SE. The positions of these islands and the associated dangers may be seen on the chart.

12.57 Tawitawi Island (5° 10'N., 120° 00'E.), the largest island of the Tawitawi Group, is mountainous, densely wooded, and sparsely populated.

The most prominent peak on the island is **Mount Sibankat** (5° 10'N., 119° 58'E.), 549m high, located in the SW part.

Prominent peaks stand close NE and SW of Mount Sibankat; these three peaks are often obscured by clouds.

Thumb Hill, 3 miles NE of the SW extremity of Tawitawi Island, rises to a height of 202m.

In the NE part of the island, **Mount Baluk Sampan** (5° 13'N., 120° 04'E.) rises to a prominent cone 320m high.

Mount Bud Bas, 349m high, lies 1 mile within the N coast, 5.75 miles NE of Mount Baluk Sampan, and Mount Bud Butau, 250m high, lies 4.25 miles farther NE.

Tidal currents off the N coast of Tawitawi Island are weak; they set SW on a rising tide off the N end of the island and join the NE current off Tongehatan Point.

Tarinen Point (5° 21'N., 120° 13'E.) is the NE extremity of Tawitawi Island. The coast between this point and Languyan Point, 9 miles WSW, is steep-to, wooded, and free of dangers.

The 40m line lies about 0.9 mile N of Tarinen Point and 0.25 mile off Languyan Point. A range of high hills back this coast.

From **Languyan Point** (5° 17'N., 120° 04'E.) the coast trends 6 miles WSW to Bacung Point. The coast is low, coral-fringed, and backed by dense woods.

Port Languyan, entered between Languyan Point and Tocanhi Point, 0.4 mile SW, is 0.15 mile wide throughout its winding length as an inlet. Anchorage can be taken at the turn of the inlet, in a depth of 12.8m, mud.

A mid-channel course from the entrance, which is difficult to distinguish until close inshore, will lead to the anchorage. A 7.6m patch lies 0.75 mile NW of Tocanhi Point.

Bugut Lapit Point (5° 09'N., 119° 50'E.) lies 10 miles SW of Bacung Point. This coast is low, coral fringed, and indented with small coves which afford shelter to small local vessels.

The remains of an abandoned settlement, and an old mole, are situated 3.5 miles SSW of Bacung Point, at the head of a small cove. Two reefs, less than 0.5 mile offshore, front the cove.

Tataan Islands are a number of low coral islands lying 0.5 mile to 2.5 miles off the N coast of Tawitawi Island.

The islands are wooded, with trees 15 to 18m high, and are fringed by coral reefs which are clearly visible.

The NW edge of these reefs are bound by coral barrier reefs, and except for the shallow area between **Tinagta Island** (5° 12'N., 119° 53'E.) and Sipayu Island at the SW end of the group, are dry except at HW.

The reefs form an excellent navigational aid when approaching the islands. Drying coral shoals extend from the SE side of the islands.

12.58 Cabancauan Island (5° 14'N., 119° 57'E.), the largest island of the group, lies 1.5 miles W of Bacung Point. Simalac Dakula Island and Simalac Sibi Sibi Island lie 0.5 mile and 0.75 mile NE, respectively, of Cabancauan Island. An extensive shoal extends up to 0.75 mile NW of these islands.

Nusa Tacbu Channel, with a least depth of 10.1m in he fairway, leads through the barrier reef into Tataan Pass, 1 mile E of Basun Channel. The edges of the reef on either side are easily seen under favorable conditions, but care must be taken to keep in mid-channel at the S end to avoid shoals on either side.

Basun Channel has a least depth of 29m. It leads into the N side of Tataan Pass 1 mile W of Nusa Tacbu Channel. This channel is not recommended as the edges of the reefs on either side are difficult to distinguish. Two low wooded islands lie on the reef on the E side of Basun Channel.

Basun Sibi Sibi Island (5° 13'N., 119° 54'E.), Basun Dakula Island and Tinagta Island lie on the same barrier reef WSW of Basun Channel; the reef is about 3 miles in extent.

There is a channel close SW of the barrier reef leading into the W end of Tataan Pass with a depth of about 12.8m.

Sipayu Island (5° 10'N., 119° 51'E.), the farthest SW of the Tataan Islands Group, lies 0.5 mile offshore, 3 miles SW of Tinagta Island.

The channel leading into the W end of Tataan Pass leads S of Sipayu Island.

12.59 Tataan Pass (5° 12'N., 119° 54'E.) lies between the N coast of Tawitawi Island and the Tataan Islands.

The NE entrance channel, over 0.5 mile wide, has a least depth of 10.6m. Two narrow channels lead through the shoal ground and dangers lying in the W entrance of the pass. The N channel, which passes close SW and S of the reef enclosing Tinagta Island, is about 0.25 mile wide and has a least depth of 12.8m in the fairway.

The S channel, which leads S of the reefs and shoals extending W from Sipaya Island and thence S of the island, is narrow and has a least depth of 13.7m in the fairway. The tidal currents flow NE on the rising tide and SW on the falling tide at a rate of about 1 knot.

Vessels can anchor, in 10.7 to 31m, coral, sand, or mud anywhere in the middle part of Tataan Pass. The anchorage area is extensive and vessels can anchor as convenient or according to the direction of the prevailing wind.

Directions.—Vessels entering Tataan Pass from the NE have only to steer a mid-channel course between the reef enclosing Cabancauan Island and the coast of Tawitawi Island.

Vessels entering Tataan Pass from the NW should pass about 0.2 mile SW of the reef enclosing Tinagta Island. This channel should only be attempted when the reefs and shoals on either side are clearly visible.

Vessels entering Tataan Pass from the SW should steer 092° for the S side of Sipayu Island.

When **Bugut Lapit Point** (5° 09'N., 119° 50'E.) is abeam, the course should be altered to the SE, then E, so as to pass from 137 to 228m S of the island.

These courses lead about 0.1 mile S of the shoal ground extending 0.5 mile W from the reef enclosing the island. Having passed Sipayu Island, vessels can alter the course to the NE for the fairway of Tataan Pass.

12.60 The E and S coasts of Tawitawi Island are low, flat, fringed by coral reefs and bordered by mangroves. Islands, islets, dry and drying reefs, shoals and rocks front the entire coast. The numerous channels along the coast are intricate and require local knowledge to transit.

Tidal currents among the islands and shoals off the S coast set NW to SE on a rising and falling tide.

Tawitawi Bay (5° 05'N., 120° 07'E.) is a large area of water between the S coast of Tawitawi Island and the off-lying reefs and islands. The E end of the bay is encumbered with shoals interspersed by channels, but only vessels with local knowledge should enter this part of the bay. Much of the W part has depths of 22 to 37m, clear of dangers.

The W part of the Tawitawi Bay is easy to navigate. When approaching from W, Bongao Island should be given a berth of a least 0.5 mile.

Baliungan Island (5° 10'N., 120° 12'E.), fringed by mangroves, is separated from the SE end of Tawitawi Island by the Mlariguina River, the channel of which has a reported depth of 5.5m.

Mount Sipusok, on the E side, 324m high, is the summit of the island, but the W side is low. Calva Island, and three other islands, lie on the edge of the reef extending from the E side of Baliungan Island.

Taata Islands (5° 09'N., 120° 09'E.), several low mangrove islands, lie in the estuary of the Dungun River, close W of Baliungan Island. There are depths of 3.7m over the bar at the entrance to the river and for a distance of 4 miles up the river.

12.61 Buan Island (5° 09'N., 120° 03'E.), which is inhabited, lies close off Tawitawi Island, 6.25 miles W of Baliungan Island. Buan Bay lies W of the island, but the approaches are foul.

The coast between Buan Island and **Balimbing Point** (5° 05'N., 119° 58'E.), 6.25 miles SW, is low, mangrove fringed, and intersected by many small rivers.

Bud Sintingan, 213m high, 0.75 mile N of Balimbing Point, is prominent, especially when the sun is shining on it, showing a reddish cliff.

This entire coastal area is foul. Lupa Island lies 0.5 mile offshore, 1.5 miles NE of Balimbing Point. The island is encompassed by a reef that extends 0.9 mile SSE.

Balimbing Channel (5° 04'N., 120° 00'E.), constricted and tortuous, connects the W part of Tawitawi Bay with the foul E part. The channel passes S of the coastal reefs off Balimbing Point and can carry a depth of 7.4m throughout. Local knowledge is essential.

Bunay Bunay Island (5°05'N., 119°57'E.), a small, low island, lies on a drying reef 0.35 mile W of Balimbing Point. The islet has a few coconut trees but is uninhabited.

Parangan Bay (5°05'N., 119°57'E.), small in extent but clear of dangers, is formed between Bunay Bunay and Tawitawi Islands on the E, and Parangan Island on the W.

Anchorage may be taken in the bay, in a depth of 14.6 to 18.3m, mud.

Parangan Island (5°05'N., 119°56'E.) lies 0.5 mile W of Bunay Bunay Island. Coral reefs fringe the island which close the narrow channel that separates the N extremity of the island from Tawitawi.

A hill, 61m high, shaped like the base of a cone, stands at the NE end of the island; a hill, 35m high, is located at the SW end. The island is inhabited and well cultivated.

Luuk Bay, formed between Parangan Island on the E side, and Tawitawi Island on the N and W sides, is encompassed on these sides by a drying reef. This small bay affords protected anchorage for small vessels with local knowledge, in a depth of 14.6m, mud.

12.62 Lubican Island (5°04'N., 119°55'E.), 0.5 mile SW of Parangan Island, is connected to Tawitawi Island by a drying mud and sand reef. Lubican is low and flat.

Borogan Island (5°04'N., 119°55'E.) lies at the S extremity of a reef that dries, extending 0.3 mile S from Tawitawi, 0.5 mile W of Lubican Island. The Malum River is entered close W of Borogan. The river is 0.5 mile wide at its mouth, but inside it narrows to a width of 30m, which is maintained for 3 miles.

Marukal Point (5°04'N., 119°53'E.) is located 1.25 miles WSW of Borogan Island. The 20m curve lies 0.2 mile S of the point. Reefs, which dry, fringe Marukal Point.

Batu Batu Bay (5°04'N., 119°53'E.) is entered between Marukal Point and Malaka Point, 0.5 mile SW. A reef, which dries, extends about 0.1 mile SSE from Malaka Point; a marker stands on the E extremity of the reef.

New Batu Batu (5°04'N., 119°53'E.) (World Port Index No. 59830) stands on the E side of the bay and is fronted by a hill. A pier, with a light on its head, extends 118m WSW from the shore. A pier in ruins extends SW from the root of the above pier.

There is a depth of 6.4m at the head of the pier, but it has been reported in disrepair and caution is required.

Anchorage can be taken in the middle of Batu Batu Bay, in depths of 9 to 18m, mud.

Luuk Sula Bay (5°03'N., 119°52'E.), a narrow inlet, is entered between Malaka Point and Patong Point, 1.25 miles SW. Two drying reefs, lying 0.4 mile ENE and NNE of Patong Point, afford protection from S seas.

The reefs are visible at all times and can be avoided by keeping to the N shore of the entrance. The shores W of Malaka Point and NNW of Patong Point are fringed by drying reefs.

Vessels with local knowledge can anchor in Luuk Sula Bay, in depths of 7 to 11m, mud.

12.63 Tangu Island (5°02'N., 119°50'E.), about 1.75 miles WSW of Patong Point, lies near the SE extremity of a spit extending SE from the E entrance point of Manalik Channel. The spit has a depth of 4.6m at its extremity, with less depths charted inshore.

Manalik Channel (5°05'N., 119°49'E.) lies between the SW end of Tawitawi Island and Sanga Sanga Island; it has a least depth of 1.4m in the fairway near Carmen Point, 1.5 miles within the S entrance. An isolated patch, with a depth of 1.5m, lies 0.25 mile N of Carmen Point.

The shores of the channel are bordered with mangroves. The channel is tortuous with several sharp and narrow turns. Tidal currents attain a velocity of 5 knots in the channel.

There is a well protected anchorage in the N part of Manalik Channel, known locally as Luuk Saul, in depths of 7m.

Chongos Bay (5°03'N., 119°49'E.), formed between the SW extremity of Tawitawi Island and Sanga Sanga Island on the N, and Papahag Island on the SW, lies at the S entrance to Manalik Channel. Sanga Sanga Channel leads W from Chongos Bay toward Port Bongao.

The channel has a least depth of 11.3m in the fairway. A stranded wreck was reported to lie on the S side of the channel.

Papahag Island (5°02'N., 119°47'E.) lies 1.75 miles W of Tangu Island; it is 21m high on its N side and is densely wooded.

Bongao Island (5°01'N., 119°45'E.), separated from the W side of Papahag Island by a channel about 0.25 mile wide, may be identified by Bongao Peak which rises to a height of 314m. There are several peaks over 183m high in the vicinity of Bongao Peak.

The outer end of Dila Point, a sand spit extending toward Papahag Island, is marked by a light. The channel on the N side of the island, separating it from Sanga Sanga Island, is foul.

Aquada Bay (5°02'N., 119°47'E.), lying between the E coast of Bongao Island and W of Papahag Island, has a least depth of 7.5m in the fairway off Dila Point. The narrow approach channel to Port Bongao, lying between the reefs extending from Bongao and Papahag Islands, has a least depth of 5.8m. Several charted depths lie in the fairway.

Anchorage can be taken in Aquada Bay, 0.75 mile W of Matos Point, the S extremity of Papahag Island, in a depth of 11 to 12.8m, coral and sand.

12.64 Port Bongao (5°02'N., 119°46'E.) (World Port Index No. 59840), is a small but good harbor formed by Sanga Sanga, Bongao, and Papahag Islands.

The town of Bongao, situated on Dila Point, includes a section built on stilts over the water. There is a concrete wharf about 15.2m long, with a depth of 4.3m alongside, connected to the shore by a narrow causeway on the NW side of Dila Point.

There is limited maneuvering room in the approach. A wooden T-head pier about 13.7m long, with a reported depth of 2.4m alongside its face, is situated 0.25 mile SW of Bongao lighted tower. Two concrete mooring posts stand on a short causeway leading to the pier. There are medical and radio facilities.

Directions.—Vessels approaching Port Bongao through Aquada Bay should bring Maangit Point, the E end of Papahag Island, in range 048° with Thumb Hill, and steer on this bearing until Bongao Light bears 333°.

Change course and steer 000° until the light bears 307° and then steer on this bearing until Lamion Point bears 227°.

Change course to 318° and pass 91m NE of Bongao Light, when course is changed N for the anchorage.

Vessels from E should steer for Bongao Peak, bearing more than 270°, to clear the shoal extending from the S side of Papahag Island. When Bongao light bears 307°, change course to that bearing and proceed as above.

Vessels approaching Port Bongao via Sanga Sanga Channel, vessels should not bring Thumb Hill to bear more than 039° until Matos Point bears 272°, to avoid the shoals off the SE side of Papahag Island.

Round the E end of Papahag about 0.5 mile off and the NE side about 0.25 mile distant. When Panijugan Point, on the N side of the channel, bears 265°, steer a mid-channel course of 263° through Sanga Sanga Channel.

12.65 Sanga Sanga Island (5° 05'N., 119° 47'E.) is separated from Tapitapi Island by Manalik Channel. The island of Sanga Sanga is densely wooded; an airstrip is located in the SW part of the island.

Sambilong Island lies in the N entrance of Manalik Channel, close NE of Sanga Sanga. Bakhau Dakula Island is located in the channel, 0.75 mile S of Sambilong Island.

Luuk Saul Anchorage is formed in the channel between the above islands and with Tawitawi Island on the E and Sanga Sanga on the W.

Sheltered anchorage can be taken in Luuk Saul, in about 7m. Anchorage may be taken in Pandan Bay, on the S coast of Sanga Sanga Island, N of Chongos Bay, in a depth of 16.5m, sand and coral.

Mandolan Island (5° 07'N., 119° 48'E.), located in the N entrance of Manalik Channel, lies 0.3 mile N of Sambilong Island. Mandolan Island lies on a drying reef which extends up to 0.5 mile N; sand cays lie on the extremity of the reef.

Sangasiapu Island (4° 58'N., 119° 50'E.), a low, flat islet, lies on a reef 5 miles S of Bongao Island. A beacon marks the E edge of the reef.

Laa Island (4° 56'N., 119° 52'E.) is covered with coconut trees. A buoy marks the W side of a 5.5m shoal lying 1 mile NW of the island. A beacon marks a sand cay between the shoal and Laa Island.

Sangasiapu Channel lies halfway between Sangasiapu and Laa Islands. The S entrance of this deep channel is marked by a buoy on each side. Leading beacons on Simunul Island, aligned 205°, lead through the channel.

This channel and Laa Channel, the latter E of Laa Island, have been swept to a depth of 9m and are used to enter Tawitawi Bay in good visibility.

Tidal currents set NE to SW on a rising and falling tide, respectively, with a velocity of about 3 knots. Tide rips form in Laa Channel, SE of Laa Island.

12.66 Simunul Island (4° 53'N., 119° 49'E.) lies 2.5 miles SW of Laa Island; a shallow lagoon indents the NE side of the island. Simunul is fringed by a reef, and is steep-to, the 37m line lies no more than 0.2 mile off the fringing reef.

Manuk Manka Island (4° 48'N., 119° 50'E.), 1.75 miles S of Simunul Island, is fringed by a reef; it is the farthest S of the Tawitawi Group. Drying rocks mark the outer edge of the reef at the SE and S sides of the island. This island is steep-to; it has been reported to give good radar returns at 22 miles.

Tijitiji Reef (4° 53'N., 119° 53'E.), separated from the E side of Simunul Island by a channel about 1.5 miles wide, is mostly drying. The channel is deep and free of charted dangers; the edges are easily seen. Whirlpools and tide rips form at the S end of the channel.

Tijitiji Islands are a group of small islands located within a barrier reef which extend 5.5 miles NE from Tijitiji Reef to Bilatan Island. Balseyro Channel lies in a N-S direction between Tijitiji Reef and Tijitiji Islands.

The tidal currents in this channel are strong, and it is not recommended.

Bilatan Island (4° 59'N., 120° 00'E.), low, flat and densely wooded, lies NE of Tijitiji Islands and on the same reef; the reef extends 4 miles N of Bilatan.

The E and SE sides of the reef, on which the islands are located, are steep-to, with no reported off-lying dangers charted.

Biloc Biloc Reef (5° 20'N., 120° 00'E.) is a continuation of the reef N of Bilatan Island and forms the S side of **Balimbing Channel** (5° 04'N., 120° 00'E.). Above-water rocks mark the NW edge of the reef and are a good landmark for entering the channel from W. The N and E edges of the reef are steep-to and well defined. A rock, awash, lies on a spit 0.75 mile W of the rocks.

Basibuli Reef (5° 03'N., 120° 03'E.) is separated E of Biloc Biloc Reef by a deep channel. Small islands lie near the center and NE side of the reef.

Banaran Island (5° 01'N., 120° 07'E.), Sasa Island, and Mantabuan Island lie on the same extensive reef separated from the SE edge of Basibuli Reef by a channel 1 mile wide, with a depth of 6.9m in the fairway. A barrier of coral rock extends along the S side of the reef which is steep-to.

Anchorage can be taken NW of the NW end of Banaran Island, in depths of 11 to 13m, hard bottom, or in 22m, sand, NE of the same point. The latter anchorage is protected from the swell, but affords little protection from the wind.

Directions.—Approaching these anchorages, enter Tawitawi Bay by the channel between Basibuli Reef and the NW end of Banaran Island, steering 024° through mid-channel.

If proceeding through Balimbing Channel, steer to pass 0.25 mile SW of **Balimbing Point** (5° 05'N., 119° 58'E.) and enter the channel on this course. A depth of 7.3m can be carried through the channel.

The anchorages N of Banaran Island are reached by this channel, or proceed to the open sea between Biloc Biloc Reef and Basibuli Reef. These channels should only be used by vessels with local knowledge.

12.67 Latuan Island (5° 04'N., 120° 16'E.), Secubun Island, and Tandubas Island lie on an extensive reef separated from Mantabuan Island by **Saland Channel** (5° 03'N., 120° 14'E.). The channel is 1 mile wide, with a least depth of 11m in the fairway, but lesser depths of 7.6 to 9.1m exist at the inner end. The islands are low, flat, and densely wooded in the interior, but cultivated along the coasts. The islands, except Labuan, are populated.

Bahang Channel (5° 05'N., 120° 16'E.), between Latuan Island and Secubun Island, is narrow and tortuous with a least depth of 22m, but the reefs on each side of the channel are easily seen. The tidal currents are strong.

Cambacamba Channel (5° 11'N., 120° 23'E.), with a width of 0.3 mile, extends in a N to S axis, about 3 miles NE of Tandubas Island; there is a least depth of 9.6m in the fairway. Tidal currents in the channel run at a maximum rate of 6 knots.

Ilag Bank, separated from the N end of Tandubas Island by a narrow channel, has drying reefs around its perimeter. Sipungut Island stands on the N edge of the bank.

Sibutu Island (4° 47'N., 119° 29'E.), about 16.5 miles long in a N to S direction and about 2.5 miles in width, is largest of the Sibutu Group; it lies 18 miles W of Manuk Manuk Island. The island is low and flat except for Sibutu Hill, which rises to a height of 137m, about 5.25 miles S of its N extremity.

The coast of the island consists of low cliffs of upraised coral, broken in places by sandy beaches. The fringing reef extends 4.5 miles from the S extremity, enclosing a shallow lagoon which has no apparent entrance. There is an airstrip 2 miles NW of Sibutu Hill, and the village of Sibutu is situated on the NW coast.

The Sibutu Group is separated from the Tawitawi Group by Sibutu Passage.

12.68 Sibutu Passage (4° 40'N., 119° 40'E.), which connects the Celebes Sea with the Sulu Sea, is deep and clear of dangers. The passage is at least 17 miles wide.

The islands forming both sides of the channel are steep-to except for the drying reef SE and S of Sibutu Island.

The only prominent landmarks are Bongao Peak on the E side and Sibutu Hill on the W side.

Tides—Currents.—Tidal currents set NNW on a rising tide and S on a falling tide with a velocity of 2 to 5 knots.

The S current may attain a velocity of 6 knots, presumably caused by the Borneo coastal current which flows SE into the passage and is most likely between October and December.

Off the NW coasts of Sanga Sanga Island and Bongao Island, the NNW current is sometimes deviated to an E and SE direction by the Borneo coastal current.

Generally, slack water occurs within 1 or 2 hours of high and LW, but the S current has been known to run several days.

During the Southwest Monsoon, the currents set N and S on a rising and falling tide. During the Northeast Monsoon, the current has been observed to set continuously S.

12.69 Saluag Island (4° 35'N., 119° 29'E.), 4.5 miles S of Sibutu Island and marked by a light, is the farthest S of the low, flat islets on the reef extending S of Sibutu.

Strong tidal currents set around the ends of the reef so that care must be taken to prevent the anchor dragging when the tidal current changes direction.

Anchorage can be taken about 1.5 miles SSE of the island.

Tumindao Island (4° 44'N., 119° 24'E.) lies 2.75 miles W of Sibutu Island; the islands are separated by Tumindao Channel, deep, wide, and clear of dangers.

Tumindao Island is low, flat, and reef-fringed on its E side. A chain of islands, similar to Tumindao, lie on the same reef which extends 8.5 miles N and 12 miles SSW. There are a number of villages situated on these islands.

Omapoy Island (4° 54'N., 119° 24'E.), 46m high, is the farthest N of the islands on the reef with Tumindao. Sipangkot Island, 58m high, lies 0.75 mile S of Omapoy Island.

Sitankai Island (4° 40'N., 119° 24'E.), 0.75 mile S of Tumindao Island, is the trading center for the island group and Bongao District. There is a landing on the edge of the reef, E of the island, which is available to launches at all stages of the tide. There is a concrete pier at Sitankai village with a depth of 4m alongside.

Gusi Island, 46m high, and Buli Nusa Island, 16.8m high, lie on the drying reef, 1 mile and 2.25 miles S, respectively, of Sitankai Island.

North Lagoon (4° 48'N., 119° 21'E.), on the NW side of Tumindao Island, is entered from the NW side of the reef; it gives access through Kabusan Channel to the village of Tumindao, on the NW side of the island of the same name.

There is excellent anchorage in the N part of the lagoon in depths of 14.6 to 16.5m. There are strong tidal currents in the lagoon entrance; approach should only be attempted by vessels with local knowledge.

South Lagoon (4° 31'N., 119° 21'E.), 6.5 miles SSW of Buli Nusa Island, is located at the S end of an extensive reef. There are depths of 7.3 to 20.1m in the lagoon.

Two narrow channels lead from W into the lagoon, which consists of two basins that are connected by a deep channel. There is an opening on the E side of the E basin.

There are depths of 7.3m in the NW channel, which is about 0.2 mile wide.

There is a depth 7.3m in the E channel which is 0.1 mile wide; the SW channel is impassable. Anchorage can be safely taken in the E basin.

12.70 Andulinang Island (4° 46'N., 119° 15'E.), an islet, lies on the W edge of Andulinang Reef, 10.5 miles W of the N end of Tumindao Island. The islet is wooded, with a hill 27m high to the tops of the trees, the most noticeable feature in the area. A rock, 9m high, lies close N.

Purdie Patches (4° 51'N., 119° 15'E.), a small group of detached coral banks with depths of 14.6 to 16.5m, lie close off Andulinang Reef, 5 miles N of Andulinang Island. There is anchorage on these patches.

The maximum rate of the tidal currents experienced over Purdie Patches was 2 knots.

Maranas Island (4° 44'N., 119° 14'E.) lies on a detached reef, 2.75 miles S of Andulinang Island; a deep, clear channel separates these two islands.

Chambers Knoll (4° 49'N., 119° 12'E.), an isolated patch with a depth of 16.5m, lies 3.75 miles NW of Andulinang Island.

Meridian Reef (4° 38'N., 119° 16'E.), 12 miles in length, is separated from Andulinang Reef by a channel 0.5 mile wide, with depths of 12.8 to 16.5m. A sand cay, which dries 1.2m, lies near the S end of Meridian Reef.

An excellent anchorage exists about 1.5 miles off the W side of the reef, in depths of 20 to 29m, coral and sand.

Meridian Channel (4° 40'N., 119° 17'E.), at least 1 mile wide, is deep and clear of dangers. It has depths of from 113 to 229m. The channel is bound by Tumindao Reef on the E, with Meridian and Andulinang Reefs, on the W.

Tidal currents in Meridian Channel run at a rate of 2 to 4 knots.

Middle Reef (4° 30'N., 119° 16'E.), with a sand cay near its N extremity, lies 1 mile S of Meridian Reef. There is a depth of

12.8m in the channel between the two reefs, but it is too narrow and tidal currents are strong, making transit unsafe.

12.71 Frances Reef (4° 27'N., 119° 16'E.), close S of Middle Reef, lies on a long drying sand cay; it is the farthest S of the chain of reefs extending S from Andulinang Island.

The E side of Frances Reef is steep-to; the channel between Frances and Middle Reefs is foul.

Blake Reef (4° 44'N., 119° 13'E.), 1 mile W of Maranas Island, is the farthest N of Bulubulu Island, Payne Rock and James Patch, which are all aligned N to S, W of Meridian Reef; their positions may best be seen on the chart.

Anchorage can be taken E of Bulubulu Island, in depths of 24 to 31m, sand.

Siluag Island (4° 43'N., 119° 09'E.), 21m high, lies on a reef 3 miles W of Blake Reef. Riddells Reef, 4.5 miles S of Siluag Island, has two drying sand cays at its S end.

A coral shoal, with a depth of 5m, lies 3 miles S of Siluag Island.

Alice Reef (4° 45'N., 119° 04'E.), 4.5 miles WNW of Siluag Island, is steep-to off its NE point. The entrance to a lagoon lies on the W side, 2.75 miles from the S extremity.

Panguan Island (4° 43'N., 119° 02'E.), 18.3m high, is located on the S end of a reef, 1 mile W of the S end of Alice Reef.

12.72 Bajapa Reef (4° 40'N., 119° 05'E.), lying SE of Panguan Island, dries in patches. It encloses a lagoon with an entrance on the SW side. An 11.3m coral and sand shoal lies 5 miles S of the S extremity of Bajapa Reef.

The channel W of a line joining Blake Reef, Bulubulu Island, and Payne Rock, and E of Riddells Reef is 2.75 miles wide at its narrowest part.

This channel is the most direct route, although the tidal currents do not attain the same strength in the channels W.

The channel W of Siluag Island and Riddells Reef, and E of Bajapa Reef, has a least width of 1.5 miles.

The tidal currents run at a considerable rate in this channel, and they should be considered before using this route.

The S edge of the bank on which these reefs lie falls steeply to great depths and is clearly marked by tide-rips and overfalls which at times give the appearance of shoal water.

Caution.—Mariners must bear in mind that the area S of a line drawn joining Bajapa Reef, Bulubulu Island, and Saluag Island remains as an incomplete survey area.